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TO THE

EXECUTIVE DOCUMENTS

OF THE

HOUSE OF REPRESENTATIVES

FOR THE

SECOND SESSION OF THE FORTY-FOURTH CONGRESS.

1876—'77.

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Volume 2...No. 1, part 2. War: parts 1, 3, 4, and 2, volumes 1, 2, and 3.
Volume 3...No. 1, parts 3 and 4, (Postmaster and Navy.)
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TO

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OF THE

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44TH CONGRESS, 2d Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. 46, Part 2.

FIRST ANNUAL REPORT

ON THE

INTERNAL COMMERCE

OF THE

UNITED STATES,

BY

JOSEPH NIMMO, JR.,
CHIEF OF THE DIVISION OF INTERNAL COMMERCE,

BEING

PART SECOND OF THE ANNUAL REPORT OF THE CHIEF OF THE BUREAU OF STATISTICS

ON THE

COMMERCE AND NAVIGATION OF THE UNITED STATES,

FOR THE

FISCAL YEAR ENDING JUNE 30, 1876.

WASHINGTON:
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THE INTERNAL COMMERCE OF THE UNITED STATES.

TREASURY DEPARTMENT,
BUREAU OF STATISTICS, *June* 30, 1877.

SIR: The act "making appropriations for the legislative, executive, and judicial expenses of the Government for the year ending June 30, 1876, and for other purposes," contains the following clause:

It shall be the duty of the officer in charge of the Bureau of Statistics to gather, collate, and annually report to the Secretary of the Treasury, for transmission to Congress, statistics and facts relating to commerce with foreign nations and among the several States, the railroad systems of this and other countries, the construction and operation of railroads, the actual cost of transporting freights and passengers on railroads and on canals, rivers, and other navigable waters of the United States, the charges imposed for such transportation of freight and passengers, and the tonnage transported.

In accordance with the above provisions of law, I have the honor to submit to you for transmission to Congress the accompanying report in relation to internal commerce, prepared under my direction by Mr. Joseph Nimmo, jr.

For information in regard to "commerce with foreign nations," I respectfully refer to my Annual Report "on the Commerce and Navigation of the United States for the fiscal year ended June 30, 1876," published in another volume, and to similar reports for preceding years.

Respectfully, yours,

EDWARD YOUNG,
Chief of Bureau.

Hon. JOHN SHERMAN,
Secretary of the Treasury.

TREASURY DEPARTMENT,
BUREAU OF STATISTICS, *June* 30, 1877.

SIR: I have the honor to submit the following report, which I have prepared under the provisions of the act of March 3, 1875, for the collection of statistical and other information relative to the internal commerce of the United States, and for reporting annually in relation thereto for the information of Congress.

Very respectfully, your obedient servant,

JOSEPH NIMMO, JR.,
Chief of Division of Internal Commerce.

Hon. EDWARD YOUNG,
Chief of Bureau of Statistics.

1.—INTRODUCTION.

Almost from the time of the adoption of the Federal Constitution to the present day, very full and satisfactory statistics of our foreign commerce have been collected and published, in the document known as the Annual Report on the Commerce and Navigation of the United States. Under the provisions of the act of February 10, 1820, the statistics of our foreign commerce were greatly enlarged, and the reports published since that time constitute an exceedingly valuable source of information. But prior to the enactment of the law under which the present work has been executed, no provision had ever been made for the collection of information in regard to our much more important *internal commerce.* This apparent neglect is attributable to several causes.

At the time of the formation of the Federal Government the term *commerce* was generally understood to comprehend trade carried on by means of sailing-vessels employed in our coastwise trade and in our trade with foreign nations. The commercial interests of the country were at that time almost exclusively maritime, and our foreign commerce, on account of issues growing out of the war of Independence and of the war of 1812, attracted public attention much more than did the then comparatively small *internal commerce.*

The omission to collect information in regard to internal commerce is also attributable to the fact that it has never been a source of national revenue, whereas the Government has largely drawn its means of support from duties laid upon imports from foreign countries.

The fact that the Government has failed to provide for the collection of information in regard to our internal commerce, while attending so carefully to the collection of information, even to matters of detail, in regard to our foreign commerce, has undoubtedly tended to depreciate in the public mind the importance of the former, and unduly to magnify the importance of the latter.

In the progress of the country during the first century of its existence our internal commerce has assumed proportions vastly greater than those of our foreign commerce. Fifty years ago the ocean, the lakes, and navigable rivers constituted the principal avenues of commerce among the States; but during the last twenty-five years railroads have revolutionized all the modes of internal commerce, and changed the direction of its movements. To-day the railroads of the country are the most important avenues of internal commerce. During the year 1876 83 per cent. of all the grain-receipts of the Atlantic sea-ports was by rail, and it is estimated that over 90 per cent. of all the commerce between the West and the seaboard is now carried on over the great trunk railroads.

It is impossible to ascertain the quantity and value of the commodities

embraced in our internal commerce in as complete a manner as such information is presented in our annual reports of foreign commerce, since internal commerce, in its fullest signification, embraces every purchase and sale, and every exchange of commodities, between individuals throughout the entire country. But such information in detail, even if collected and published, would be of little practical value. It is, however, quite practicable to procure such characteristic data, and such other information in regard to the principal movements and conditions of our internal commerce, as may be needful for the information of the public and for purposes of legislation.

The relative importance of internal and of foreign commerce may be inferred from the following comparative statements:

Estimated value of shipping (American and foreign) employed in our foreign trade	$200,000,000
Estimated value of the railroads of the United States	4,600,000,000

The value of the commodities embraced in our foreign commerce and the estimated value of commodities transported on railroads are as follows:

Value of imports and exports, (foreign commerce)	$1,121,634,277
Estimated value of commodities transported on rail, (internal commerce)	18,000,000,000

It appears from these estimates that the value of the railroads of the country is about *twenty-three times the value of the shipping engaged in our foreign trade*, and that the value of our internal commerce on railroads is *about sixteen times the value of our foreign commerce.*

It is to be observed that these comparative statements embrace the value of our entire foreign commerce, whereas the data in regard to internal commerce relate only to railroads. If it were possible to ascertain the value of the commerce between the different sections of the country on the ocean and Gulf and on the lakes, rivers, and other avenues of transportation, we should probably find that the total value of our internal commerce is at least twenty-five times greater than the value of our foreign commerce. But the average value per ton of the commodities composing the internal commerce of the country being very much less than the average value of the commodities composing our foreign commerce, it is evident that the tonnage of internal commerce (*i. e.*, employment of the vehicles of transportation) bears a very much higher ratio to the tonnage of our foreign commerce than does the value of our internal commerce to the value of our foreign commerce. It is probable, therefore, that the tonnage transported on the various avenues of internal commerce is *more than one hundred times greater than the tonnage composing our foreign commerce.* If in the estimate of tonnage transported we should assume each passenger to be the equivalent in car-service of one ton of freight—the estimate sometimes adopted by railroad managers in equating traffic—the relative magnitude of our internal commerce would appear to be very much greater.

A striking contrast exists as to the available means of obtaining information in regard to internal commerce and to foreign commerce. At each one of the custom-houses of the country there are one or more officers of the National Government charged with the duty of furnishing statistics in regard to foreign commerce, at stated times and according to prescribed forms; and there at is Washington a bureau charged with the duty of collating such information, and of annually reporting in relation thereto for the information of Congress.

The work of collecting and preparing information in regard to internal commerce is, however, attended to at the present time by the small force employed in this division, together with the few experts employed at small rates of compensation at various points throughout the country.

Besides the facts furnished by these experts, the most valuable sources of information are reports of boards of trade and of chambers of commerce, reports of railroad companies, and of railroad commissioners of the various States, and statistics of various kinds furnished by States and by commercial and industrial associations. The statistics published by boards of trade, railroad companies, and State authorities, are presented under a great variety of forms. Some are quite valuable, but others are very meager and defective. From these sources and the information furnished by experts sufficient data has been obtained for the purpose of illustrating the general course of commerce between the different sections of the country.

From the force of the circumstance just alluded to, the present report is necessarily of a general and preliminary character, relating chiefly to the forces and conditions governing the internal commerce of the country and the principal movements of that commerce.

The principal transportation-lines of the United States are delineated upon the maps which may be found at the end of this report. These maps are numbered from 1 to 13, inclusive. The principal trunk railroads of the United States are shown on Map No. 1 and the principal water-lines on Map No. 2.

2.—THE PRINCIPAL TRUNK RAILROADS OF THE UNITED STATES.

The trunk railroads herein mentioned are: *first*, roads connecting the Western States with the North Atlantic States; *second*, roads connecting the Western States with the Gulf States; and, *third*, roads connecting the North Atlantic States with the South Atlantic States and Gulf States.

Map No. 3 represents the Grand Trunk Railway with its branches and principal connections over which commerce is carried on by means of co-operative freight-lines between the Western States and the New England States. The Grand Trunk Railway passes through the States of Vermont, New Hampshire, and Maine to Portland, the winter-port for the foreign commerce of Montreal during the close of the navigation

of the Saint Lawrence River. The management of the Grand Trunk Railway have recently formed a connection with a line extending from its present western terminus at Port Sarnia, near the foot of Lake Huron, to the city of Chicago, the center of the commerce of the Northwest. Over this route the new fast-freight line known as the Great Eastern line is now in operation, forming, in connection with the Grand Trunk line of steamers at Montreal, the means of direct transportation between Chicago and Liverpool.

The Central Vermont Railway, with its various lines extending into and through the States of Vermont, New Hampshire, Massachusetts, Rhode Island, and Connecticut, is also shown upon the same map.

The Grand Trunk Railway, by means of its line to Portland and its connection with the Central Vermont, competes actively with the New York Central and its principal eastern connections, the Hoosac Tunnel line and the Boston and Albany Railroad, at many important points in the New England States.

Map No. 4 represents the New York Central Railroad with its branches and principal connections over which commerce is carried on between the Western States and the Atlantic seaboard. The two most important eastern connections of the New York Central Railroad are, first, the Boston and Albany Railroad extending from Albany to Boston, and, second, the Hoosac Tunnel line. This latter line has been formed by a union of the interests of the Fitchburgh Railroad, the Troy and Greenfield Railroad, and the Troy and Boston Railroad. It extends from the city of Boston to Troy and to Schenectady, New York, at which points it connects with the New York Central Railroad.

The Troy and Greenfield Railroad is owned by the State of Massachusetts. The construction of the Hoosac Tunnel was begun by a private corporation about the year 1853. Subsequently it passed under the control of the State of Massachusetts, and it was completed in the year 1874, at a cost of about $17,000,000. A full description of this line is presented in the statements of Mr. Curtis Guild and Mr. Hamilton A. Hill, Appendix, pages 100 and 134. The statements of these gentlemen also embrace other information of interest in regard to the railway enterprises of New England, especially in regard to those roads projected or constructed with the view of developing commerce between the New England States and the Western States.

Map No. 5 represents the Erie Railway with its various branches and connections over which commerce is carried on between the Western States and the Atlantic seaboard. Its principal western connections are the Atlantic and Great Western Railway, from Salamanca to Cincinnati, and the Baltimore and Ohio Railroad line from Mansfield, Ohio (a point on the Atlantic and Great Western Railway,) to Chicago. The Erie and Great Western Railways have a gauge of 6 feet, whereas all connecting roads have the standard gauge of 4 feet 8½ inches. This

fact has been to some extent an obstacle to the formation of combinations between them and other roads.

Map No. 6 represents the Pennsylvania Railroad with its various branches and extensions, embracing all lines owned or controlled by the Pennsylvania Railroad Company, over which commerce is carried on between the Western States and the States of the Atlantic seaboard The lines controlled and operated by this company constitute the most extensive railway organization in the world. The magnitude of this enormous organization is further indicated by the following facts: Number of miles of railroad constructed in the United States, 74,658; number of miles controlled by the Pennsylvania Railroad Company, 5,933. It appears that of the whole number of miles of railroad in the United States the Pennsylvania Railroad controls 7.9 per cent. The total capital of all the railroads in the United States is stated at $4,658,208,630, of which the Pennsylvania Railroad controls $398,267,675.22, or 8½ per cent.

These lines pass through or extend into eleven States and command the connections of the sea, the lakes, and the Mississippi River. In the magnitude of its financial operations, this great organization is second in this country, only to the Government of the United States. The value of the commerce over its various lines is equal to that of the entire foreign commerce of the United States.

The Pennsylvania Railroad, by securing the control of the Pittsburgh, Fort Wayne and Chicago Railroad, formed a through connection to Chicago in the year 1869. It also secured a line under its own control to Cincinnati in the year 1869 and to Saint Louis in 1869. By the lease of the United Railroads of New Jersey it secured a connection to New York in the year 1871, by the lease of the Northern Central Railroad a line was secured to Baltimore in the year 1870, and by the lease of the Baltimore and Potomac Railroad in 1870 a line was secured to the city of Washington. This great organization has thus secured termini at four cities on the Atlantic seaboard, viz, New York, Philadelphia, Baltimore, and Washington, and by means of its various lines it has secured connections to nearly all the principal cities of the West.

The Baltimore and Ohio Railroad and the Pennsylvania Railroad are the only companies in the United States which have obtained the control of lines as far west as Chicago.

Map No. 7 represents the Baltimore and Ohio Railroad with its various branches and extensions. The Baltimore and Ohio Railroad Company secured direct control over connecting lines to Cincinnati in the year 186-, and to Chicago in the year 1874, and by means of a close alliance with the Mississippi and Ohio Railroad it has recently secured a through line to Saint Louis.

The Chesapeake and Ohio Railroad, extending from Richmond to Huntington on the Ohio River, was completed about five years ago, but as yet its only western connection is the Ohio River. It is now in con-

templation to construct a connecting line to Cincinnati, and it appears probable that this will be accomplished in the course of a few years. When this line shall have been completed and other western connections secured, affording such advantages for western traffic as are now enjoyed by other trunk-lines, it will probably become one of the important highways of commerce between the West and the seaboard.

Maps Nos. 8 to 13, inclusive, were prepared by Mr. Albert Fink for the purpose of illustrating facts presented by him in his statement to this Department in regard to the movements of commerce between the Western and Northwestern States and the South Atlantic and Gulf States. The various trunk lines of the Southern States are delineated upon these maps.

The principal trunk lines connecting the Western States with the Gulf States west of the Mississippi River are—

1. The Iron Mountain Railroad, with its connecting lines passing through the States of Missouri, Arkansas, and Texas, and

2. The Missouri, Kansas and Texas Railroad, passing through the States of Missouri, Kansas, and Texas and the Indian Territory.

The principal trunk lines connecting the Western States with the Southern States east of the Mississippi River are—

1. The New Orleans, Saint Louis and Chicago Railroad, extending from New Orleans to Cairo, Ill.;

2. The Mobile and Ohio Railroad, extending from Mobile to Columbus, Ky.; and

3. The Louisville and Nashville and Great Southern Railroad, with its various branches and connecting lines.

The principal trunk lines connecting the North Atlantic with the South Atlantic and Gulf States are—

1. The Virginia and Tennessee Railroad;

2. The line known as the Atlanta and Richmond Air-Line Railroad; and

3. The all-rail line formed by the various connecting roads from Virginia, and passing through Weldon, Goldsborough, and Wilmington, N. C., and thence, by various connecting lines, into all the Southern States.

The Atlantic Ocean and the Gulf of Mexico constitute the most important highway of commerce between all points along the coast, and this maritime traffic is an effective regulator, both directly and indirectly, of freight-rates upon almost all the trunk railroad lines and the interior water-lines of the United States. The effects of competition between vessels and railroads in the commerce between the North Atlantic States and the South Atlantic and Gulf States are very clearly presented by Mr. Fink. [Appendix, page 1.] The interior water-lines of the United States are fully described in another connection.

The foregoing sketch of the principal transportation-lines of the United States is necessarily very brief, as the limits of this report will not admit

of a description more in detail. Much valuable information in regard to transportation lines may also be found in the appendix to this report.

Each one of the trunk railroads mentioned competes with one or more of the other trunk roads at many interior points by means of through-freight lines and branch lines. These trunk lines also compete sharply with each other at the chief Atlantic seaports. The New York Central Railroad, with its eastern connection—the Boston and Albany road—competes to some extent with the Grand Trunk Railway at Portland.

At Boston the Grand Trunk Railway, through its New England connections, competes with the New York Central Railway and its principal New England connection, the Boston and Albany Railroad. The Erie Railway, the Pennsylvania Railroad, and the Baltimore and Ohio Railroad also compete for western traffic at Boston by means of prorating arrangements with steamer-lines running coastwise from Boston to New York, Philadelphia, and Baltimore, respectively, and also by means of connecting rail lines.

At New York, the New York Central, the Erie, and the Pennsylvania Railroads compete with each other directly. The Baltimore and Ohio Railroad is also to some extent a competitor of those roads at New York, under certain conditions, which are matters of agreement between the rival roads.

At Philadelphia, the Baltimore and Ohio Railroad is to a certain extent a competitor of the Pennsylvania Railroad, and at Baltimore, the Pennsylvania and Baltimore and Ohio Railroads actively compete with each other for western traffic. As shown in another part of this report, these lines also compete with each other very sharply through the competition of product with product in the various markets of the country.

Competition between railroads has run wild during the last four or five years, and it appears to be very difficult for the trunk lines to combine for the maintenance of remunerative competitive rates. This subject is treated of somewhat at length in another part of this report.

An unbroken line of railway communication was secured between Chicago and the Atlantic seaboard by the completion of the Michigan Southern Railway in the year 1852, and all-rail communication between Saint Louis and the Atlantic seaboard was secured by the completion of the Mississippi and Ohio Railroad in 1856. During the decade from 1850 to 1860 railroad connections were formed between almost all the important cities of the West and the Atlantic seaboard.

For several years the railway system of the country with respect to the transportation of the surplus products of the West to the seaboard and the transportation of merchandise from the seaboard to the West presented a disconnected system of independent roads. Delays, inconveniences, and hazards of various kinds were involved in this mode of transportation, and railroad companies were unable to employ their cars, locomotives, and working force advantageously. The cost of transportation was so great that the evident possibilities of the railroads of the

country could not be fully realized. This led to the formation of "through" or "fast-freight" lines.

THROUGH-FREIGHT LINES.

In view of the great importance of "through-freight" lines as agencies of internal commerce at the present day, the subject is deemed worthy of especial notice.

The first form of "through" or "fast-freight" line adopted was that known as the "private" line. These lines were formed through concessions made to companies or individuals who furnished the necessary cars and paid to the railroad companies specific sums for the privileges granted. While this system afforded very great commercial advantages, it was found to involve serious difficulties with respect to the interests of the stockholders of the roads. The freight-lines not only absorbed the entire profits of the through traffic, but in certain cases caused this traffic to become an actual charge upon the roads, the fast-freight lines being allowed to take the higher-paying freights, leaving the lower classes of freights to be carried by the railroad companies at less profitable rates. In some cases the proprietors of fast-freight lines were managers of the railroads over which they were run, and the concessions were believed to have been fraudulently obtained. This form of fast-freight lines still exists to a limited extent, but under conditions which experience and a thorough knowledge of the value of the privileges granted has proved to be just and equitable.

The views entertained by the investigating committee of the Pennsylvania Railroad with reference to the fast-freight lines operating over that road (private lines) are thus stated:

> So intermixed among the western roads is the passage of freight, that railway companies cannot make arrangements among themselves to work it successfully, and there is an absolute necessity for the intermediate presence of a third party, whose relations to all the companies give them access to their different roads. A company organized purely by the railway companies to do this kind of trade has been tried and has not proved successful. It lacks the force, energy, interest, and immediate responsibility which a private company working for its own interests furnishes.

The internal commerce of the United States now presents many phases with respect to the commodities transported, the direction of the various movements, and the necessary facilities for safe and economical transportation. The through-freight lines seem to have met the requirements of the day. The principal part of the traffic between the East and the West is now carried on by what is known as co-operative freight-lines, formed by setting apart a certain number of cars belonging to several roads, for through traffic. The cars so set apart are painted of a distinctive color, or receive certain marks, and are placed under one general management. These cars, being loaded at the West, pass without breaking bulk to their destination at the East, and in the same manner return freights are shipped to various points at the West. Each company entering into any particular line furnishes a certain

quota of cars, based upon the amount of traffic, the length of the road, the time required to load and unload, and the time required to attend to the traffic, and each road receives its due proportion of the gross receipts upon the basis of mileage.

The following extract from a statement made by Mr. J. D. Hayes in his report to this Department affords an idea of the magnitude of the through freight-lines and the nature of the competition between them:

Over the New York Central Railroad there are several lines, nearly all co-operative:

	Cars.
Red line, about	4,000
White line, about	3,000
Blue line, about	4,000
Merchants' Dispatch, about	2,700
Detroit and Milwaukee, about	800
Saginaw Valley, about	400
International, about	2,000
Hoosac Tunnel, recently formed	
Canada Southern, recently formed	2,000

There are several oil-lines and other lines of minor importance on the Erie Road, viz: the Erie and North Shore, Commercial Express, Great Western Express, Diamond, and several minor lines. The Grand Trunk has the National line and their own through line from Detroit to Portland and Montreal, employing probably about 8,000 or 9,000 cars.

Then there are the Globe, Empire, Star, Union, and others that I do not now call to mind, employing in the aggregate in transporting property to the seaboard *not less than* 60,000 cars. Allowing twenty days to the round trip from Chicago to the seaboard and back, with 10 tons to the car, would be equal to a carrying capacity of 30,000 *tons per day*. They traverse all parts of the West and East wherever they can do business, frequently making special rates over competing lines in the West, and placing the trunk lines in the position of accepting rates made against other lines running over their roads, thus in reality competing against themselves for the same business, while they pay their proportion of the expenses of the competing agents who bid against each other for business.

The manner of prorating the traffic of the co-operative lines is described by Mr. Hayes in his statement to this Department. (Appendix, page 49.)

The various forms of through-freight lines occupy a very important place in the commercial movements of the present day. The sphere of their operations is continental in extent and their influence pervades the entire internal commerce of the country. They also exert a very important influence upon our foreign commerce.

It is impossible within the limits of the present report to enter upon a particular description of all the through-freight lines of the country, and even if presented, such description would perhaps afford no clearer general idea of their operation than would a description of one of the principal lines accompanied by statements pointing to the peculiarities of the various lines. These lines differ in matters of detail as to the classes of commodities carried, the vehicles employed, and the modes of transacting business. It is found that the success of commerce at the present day depends largely upon lines of adaptation, embracing route

vehicle, commodity, speed, terminal facilities, and various other requirements of transport and of trade. The chief economy in the carriage of certain commodities which are moved in large quantities consists in the use of cars especially adapted to the required purpose. Cars of peculiar construction are required for the transportation of sheep and hogs, of fresh meats, of grain, of the more expensive articles of merchandise, of commodities required to be carried with great care, of mineral oil, and of lumber, timber, stone, brick, coal, &c.

A "through-freight line" must have clearly defined limits and an established line of policy. There must also be a general relevancy of routes to the nature of the business done and to the circumstances which shape the character and direction of its traffic. The following statement in regard to the Empire Transportation Company is presented for the purpose of illustrating the general features of the system of through-freight lines. This line has been selected from the fact that the necessary information has been derived from published documents and through the courtesy of its president, Col. Joseph D. Potts, of Philadelphia, Pa., in reply to a request from this office.

The Empire Transportation Company.

The Empire Transportation Company is one of the most extensive freight-lines in the United States. It appears to have escaped the prejudices which formerly attached to private fast-freight lines.

The investigating committee of the Pennsylvania Railroad Company, in sustaining the policy of employing such lines for special classes of traffic, in their report, say that—

> The work of the Empire Transportation Company is of that peculiar and special character that it cannot at this time be replaced by any organization your company could form, to do the work so promptly, so economically, and with such satisfaction to shippers and such ultimate profit to the Philadelphia and Erie Railroad Company and to the Pennsylvania Railroad Company.

The Empire Transportation Company owns 4,500 cars. It has contracts with 5,793 miles of railroad for furnishing cars and engaging in transportation of freight. An arrangement is also made by means of which the cars of this company are allowed to run over 18,575 miles of roads with which there is no special contract, so that the total mileage of roads over which the cars of this company are run amounts to 24,367 miles, or nearly the circumference of the globe.

The total railroad mileage of the United States being about 74,600 miles, it appears that this company runs its cars over about 33 per cent. of all the railroads of the country. The cars of other through freight lines, co-operative and non-co-operative, are also employed on many of the same roads, on some roads the cars of eight or ten such lines being operated.

The Empire Transportation Company owns and employs eighteen large steamers and sailing-vessels on the lakes, plying between Erie, Pa., and western ports. At Erie it has two large grain-elevators and exten-

sive docks. In the city of New York and in Philadelphia it has ample accommodations for receiving and distributing freight. It is also largely engaged in the transportation of mineral oil in bulk, and, in order to manage this traffic, the company has laid about 400 miles of iron pipe, traversing the whole oil-region of Pennsylvania and connecting the various oil-wells with tanks at the depots of the company.

During the year 1873 the Empire Transportation Company moved east and west 952,737 tons of freight. The company is directly responsible to the public as a common carrier for all losses sustained by shippers, and the various roads over which its cars are run are responsible to it for the safe and expeditious movement of cars and freights under the terms of the several contracts with such roads.

All roads with which the Empire line has no special contract receive the usual freight-rates on all commodities transported and allow the customary mileage for the use of the Empire cars at the rate of one cent per mile, an arrangement similar to that which obtains with regard to co-operative or railroad partnership lines.

The cars of the Empire Company pass over many lines at the West, but they are confined to one line, viz, the Philadelphia and Erie branch of the Pennsylvania Railroad, in forming a connection with the seaboard. This, as already stated, is a characteristic of all the trunk lines engaged in through business between the West and the seaboard.

Purposes for which through-freight lines have been formed.

The through-freight lines have been formed mainly for the purpose of obtaining for the eastern trunk lines traffic in all parts of the Western States. Each one of the eastern trunk roads still has its own through-freight lines, no one of which is allowed to run over any other trunk line to the seaboard. At the western terminus of the eastern trunk lines, however, the freight-lines intermingle, two or more of them being employed or allowed to run on almost every important railroad at the West. Some of the western roads are copartners in several of the co-operative lines, and, besides, allow the cars of every other freight-line to run over their roads upon payment of an agreed proportion of the through rate, the line owning the cars usually receiving one cent per car per mile run.

When the fact is taken into consideration that the routes of all these various lines, co-operative and private, overlap and cross each other at innumerable points throughout the Western and Northwestern States, an idea may be formed of the exceedingly complex results which arise in the competition for through business. Each one of the freight-lines exercises through its general operations and the efforts of its agents in all parts of the country a constant and potential influence over the commerce and over the transportation lines of the country.

Besides the private fast-freight lines owned and operated by companies or individuals not connected with the management of roads, and

the co-operative freight-lines managed by independent organizations established by the railroads entering into the arrangement, there is another form of combination by means of which the advantages of direct transportation are also secured. This consists simply in setting apart certain cars for through traffic, which are distinguished by distinctive marks or colors. Each company, however, retains the entire control of the traffic over its own road. The use of cars is paid for at an agreed rate, the various companies employ their own soliciting agents at such points as they may deem proper, and settlements as to receipts, losses, and car-service are adjusted by the managers of the various roads.

The roads west of Chicago and Saint Louis have not found it to their interest to enter into co-operative freight-line combinations with the eastern trunk roads, but they generally establish rates over their own lines, leaving the trunk roads to determine among themselves as to the rates which shall prevail from the western centers of traffic to the seaboard. By this means the western roads avoid becoming parties to the fierce struggles between the great trunk lines connecting the West and the East. Differences in the nature of the car-service on the roads east of Chicago and Saint Louis and on the roads west of these cities also render the formation of through-freight lines over these two classes of roads unadvisable at the present time.

CONSOLIDATION OF RAILROAD LINES.

The New York Central Railroad, the Erie Railway, the Pennsylvania Railroad, and the Baltimore and Ohio Railroad had few interests in common prior to the time when they formed connections with the system of roads in the Western States and became competitors for that enormous commerce between those States and the States of the Atlantic seaboard. Until then the geographical limits of the traffic of each road was separated by well-defined territorial limits, and competition as to through traffic did not exist. This was the relative situation of these great trunk lines until about the year 1853. But in the course of a few years a net-work of railroads was constructed throughout the Western States, and connections were formed between all those roads and the four trunk lines of the Atlantic seaboard. The Grand Trunk Railway of Canada has also formed similar connections.

The rapid development of commerce which followed the formation of through-freight lines led certain of the trunk lines to adopt the more ambitious policy of extension by leasing or purchasing connecting lines. It was supposed by the managers of the trunk roads that such connections would afford them a very extensive control over the internal commerce of the country and enable them to direct the course of traffic. These expectations have not, however, been realized. Experience has proved that the course of trade and the charges which can be imposed for transportation of through freights are to a great extent governed by competitive forces beyond the control even of these powerful trunk lines.

Mr. J. D. Hayes, of Detroit, Mich., has expressed the following opinion upon this subject:

> There was a time when the tendency of our railway system was toward the consolidation of connecting lines; but I think that time is past. Main lines have become so loaded down with wings or side lines that they do not want many more such dead weights attached to them. The time has gone by when managers of trunk lines can float side-line securities at a profit. Therefore the connection must be upon business given and taken from them.

The managers of many trunk lines have adhered to the conservative policy of relying upon through-freight-line connections with other roads in the belief that greater advantages are to be secured by offering to connecting roads favorable terms as to through traffic than by attempting to secure the control of lines which they might afterwards be obliged to favor as against other lines not under their control.

Railroad managers differ widely in their views in regard to the policy of extension. In practice the question is determined mainly by geographical and commercial considerations and by the disposition and general views of policy entertained by the managers of each particular line. The Pennsylvania Railroad Company and the Baltimore and Ohio Railroad Company have thus far outstripped all the other trunk lines in carrying out the policy of railroad extension. The New York Central Railroad Company, on the other hand, has not yet secured under its own control any through line to Chicago, Cincinnati, or Saint Louis. It is, however, closely allied in interest with the Lake Shore and Michigan Southern Railroad and the Canada Southern Railroad, and it has for several years had through-freight-line connections throughout the Western States. In view of the financial strength of the New York Central Railroad and the ability of its management it appears that the company has refrained from embarking in the extension of its own lines from views which have prevailed in regard to its financial interests.

There is a vitally important consideration which limits railway extensions under one management, viz, the limit fixed by the difficulties and dangers attending the administration of an overgrown enterprise. An appreciation of this fact led the investigating committee of the Pennsylvania Railroad "to congratulate the stockholders upon the happy escape from the injuries in which the spirit of expansion and undue extension of railroads seemed likely to involve the main lines of railroad, a continuance of which for a few years longer would certainly have made bankrupt every trunk line in the country which indulged in this policy." (Report of committee, page 42.)

A great railroad organization may be successful so long as its interests are intrusted to a board of directors and a chief executive officer possessed of the requisite ability to comprehend all the economic and commercial questions involved in its management, and so long as harmony prevails among its managers. There are few men, however, who possess the power and breadth of view necessary to the discharge of such important duties.

The investigating committee of the Pennsylvania Railroad in their report expressed their opinion of the importance of this consideration as follows:

> Changes must take place in time, and under an incompetent, dishonest, or speculative president, which is by no means impossible, what havoc and destruction of values might be made of your property, causing deep disgrace and wide-spread suffering!

On page 243 of the Appendix may be found a table giving the length of main line and of branches under the control and management of several of the principal trunk railroads of the United States. The geographical and commercial considerations which limit the control of railroads are more fully set forth in the section of this report which relates to the subject of competition.

3.—THE ECONOMY OF TRANSPORT BY RAIL.

Railroads having become important highways of commerce between States and sections of the country, it appears to be proper in entering upon a discussion of the commercial movements of the United States to consider the more important conditions which determine the cost of transportation by rail and the manner in which these conditions influence the conduct of railroad managers.

In the discussions which have taken place relative to commerce on railroads very erroneous views have been expressed in regard to *the cost of transportation*. A failure to appreciate the bearing of circumstances of an economic nature, upon the cost of transportation has led to disastrous results in railroad management and to worse than futile legislation in attempts at governmental regulation. The cost of moving freight upon railroads, instead of being a simple question susceptible of a single answer, is one of great difficulty and complexity.

The public have been greatly misled by tables purporting to give the cost of transportation on different classes of roads, the only distinction observed being that of "light grades" and "heavy grades." Within the last four or five years, however, a few men of scientific and practical attainments have entered upon a thorough investigation of the subject, and the results reached by them are of great value. Much remains to be done in this direction. It was ascertained by Mr. Albert Fink (late superintendent and general manager of the Louisville, Nashville and Great Southern Railroad) that the average cost of transport on the various lines operated by that company varies from 1.18 cents per ton per mile to 19.1 cents per ton per mile, the average cost on the more expensive lines being more than ten times the average cost on the less expensive ones.

The average cost of transportation not only differs on different roads, but it varies widely with respect to the carriage of different commodities on the same road. Mr. Fink also states that the results of the special computations made by him proved that the cost per ton per mile in some instances *did not exceed one-seventh of one cent, and in others was*

as high as 73 *cents per ton per mile*, the latter rate being 511 *times greater than the former*, the lower cost applying to freights moved in cars that would otherwise have run empty, and the higher cost to freights in small quantities, carried in the direction of the principal movement.

The elements of cost of transportation on railroads may be classified as follows: First, cost of maintenance of the road; second, terminal expenses; third, transportation-expenses proper, or cost of movement of freight; and, fourth, general expenses, including rental of offices, salaries of officers, and all expenses connected with the general conduct of the affairs of the company. Referring to these distinctions of prime importance, Mr. Fink, in his treatise on railroad transportation (page 28) says:

> The confusion which exists in the minds of some people on the subject of railroad tariffs arises from the prevailing practice of combining the charges for three distinct services in one and applying a measure to the whole which can only be properly applied to a portion of it.

CIRCUMSTANCES AFFECTING THE COST OF TRANSPORTATION BY RAIL.

There are various circumstances affecting the cost of transportation on railroads, some of which may be noticed.

(*a*) *Gradients.*—The gradients of the railroads constituting important highways of commerce differ very much, the maximum being about 125 feet to the mile. Auxiliary motive power is frequently required in order to overcome the heavier grades. Differences of opinion exist as to the effect of gradients of known declivity upon the cost of transportation.

A somewhat generally accepted proposition is that the resistance on a grade of 20 feet to a mile is double that on a level road. The effect of grades upon cost of transportation varies very much on different roads, owing to the different weight of the locomotives employed, the cost of coal, and the magnitude and direction of the tonnage moved. A sufficiently accurate idea of the general effect of grades may be inferred from the following data as to the load which a 33-ton locomotive can haul over different grades, the information being furnished by the Baldwin locomotive-works of Philadelphia:

Grades.	Hauling power.	Number of loaded cars.
	Tons.	
On a level	1,400	70
20 feet to the mile	655	32
40 feet to the mile	415	21
60 feet to the mile	300	15
80 feet to the mile	230	11
100 feet to the mile	180	9

The tractive power of a locomotive is limited by its adhesion to the track, which is about one-sixth of its weight, on its driving wheels.

(*b*) *The cost of transportation on every road is affected greatly by the cost of the road itself.*—Suppose two roads of equal length and having an equal amount of traffic, one of which has cost $20,000,000 and the other $10,000,000. Evidently the traffic on the former road must earn more than that on the latter in order to yield the same rate of interest on the investment.

(*c*) *The cost of transportation on railroads is greatly affected by the wages of labor and the cost of material.*—The wages of labor and the cost of material are even 50 per cent. greater in certain localities than in others.

(*d*) *The cost of fuel is a very important element affecting cost of transportation.*—A road passing over coal-beds will be able to procure its supplies of fuel at low rates, while the cost of fuel on a road which must pay the expense of transporting coal several hundred miles will be much greater. The railroad companies of Ohio and Pennsylvania procure coal for about $1.50 per ton, whereas the railroad companies of Wisconsin and Iowa are obliged to pay $4 to $5 per ton for coal of an inferior quality.

(*e*) *The cost of transportation on the more northerly roads of this country is greatly affected by frost and snow.*—No accurate computation can be made of the effect of frost and snow upon the cost of transportation; but careful estimates, based upon the most reliable data which can be procured, indicate that on many of our northern roads the cost of operating during the winter-months is from 10 to 25 per cent. greater than during the other months of the year. Great expense is sometimes incurred in removing snow after a severe storm.

(*f*) *Volume of traffic.*—This is the circumstance which perhaps affects the cost of transportation on railroads more than any one which has yet been mentioned. A large amount of freight can be carried at much less cost per ton per mile than a smaller amount. Upon this condition more than upon any other, railroad managers base their general estimates of cost of transportation. The importance of this consideration may be illustrated by the following table, which gives the cost of transportation on each line operated by the Louisville, Nashville and Great Southern Railroad Company:

Line.	Cost per ton per mile.
	Cents.
Main stem	1.78
Memphis line	2.10
Nashville and Decatur Railroad	2.54
Knoxville branch	4.17
Bardstown branch	7.72
Richmond branch	9.60
Glasgow branch	19.10

The differences in the cost of transportation are due mainly to differences in the amount of traffic over the several lines.

It appears that the cost of transporting a ton of freight one mile on

the main stem, including the interest charges, was only 1.78 cents, and that the cost of the same service on the Glasgow branch was 19.10 cents. Both lines were managed by the same company with the same degree of skill and economy, and the difference in the cost per ton per mile was due to the fact that the traffic on the main line is so much greater, consisting chiefly of through business, in large quantities—much of it in car-loads—whereas the traffic on the Glasgow branch was exclusively of the class termed "local," in small quantities, generally less than a car-load.

The work performed with respect to movement was precisely the same in the two cases, and yet the cost of performing it was more than ten times greater in the one case than in the other.

The effect of an increase of traffic upon the cost of transportation is due largely to the fact that several sources of expenditure in the operation of railroads are either very little or not at all affected by the quantity of freight carried. Among these expenditures may be mentioned repair of bridges and maintenance of roadway, not including iron. There are also other expenditures which are increased by an increase of traffic, but not in the same proportion. Those expenses which are termed "fixed," being very little or not at all affected by the volume of traffic, vary from 30 to 80 per cent. of the total cost of transportation on different roads.

The difference in the cost of transportation due to magnitude of traffic was very clearly set forth by the presidents of the Chicago and Northwestern and the Chicago, Milwaukee and Saint Paul Railroads in a memorial to the Wisconsin legislature, as follows :

> The railways which radiate from Lake Michigan and run like lattice-work throughout the West, gather up business and centering at Chicago pour it by train-loads on to the through lines to the East. The latter have simply to forward it. It is this fortunate condition which gives the New York Central Railroad 16 miles of freight-cars daily. The western roads are feeders; the eastern lines are receivers. The latter are saved the expense of picking up this business by driblets. It comes to them in volumes. Trains follow each other in quick succession, and their constant movement insures economy.

As an illustration of the relative importance of magnitude of traffic and of distance, as elements in the cost of transportation, the following extreme case may be stated: Assume a local point situated on a railroad 50 miles from New York City. The person who ships grain from that point to New York in small quantities brings it in sacks to the railroad station, where it is stored until a car is in readiness for its reception. It is placed in the car by hand, and in the same car are loaded the miscellaneous products of that locality seeking a market at New York. This car may not be more than one-half or even one-fourth loaded. It remains upon a side track until the train of which it is to constitute a part arrives on its way to New York. The time of this train, the steam-power of the locomotive, and the service of the employés of the road are consumed in the work of receiving the grain into the

freight-house, in delivering it into the car, and in connecting the car with the train. On the arrival of the train at New York, the grain is handled in connection with various classes of freight, in the expensive manner incidental to the transaction of a package-traffic. The grain is then delivered by hand to the consignee, and the sacks in which it was contained are afterwards returned, being billed, receipted for, and finally delivered to their owner by the agent at the local station.

No computation is necessary in order to prove that the cost of transporting grain but 50 miles may, in such a case, be in excess of the cost of transporting it several hundred miles if in the latter case it is spouted into cars from grain-elevators and hauled in trains of twenty cars carrying 400 bushels each, or 8,000 bushels in all, and running day and night, with no other interruptions than may be necessary for taking in supplies of fuel and water. The effect of distance upon the cost of transportation may, in certain cases, be the element of least importance. It is, however, to be observed in this connection that efforts have been made to defend certain unjust discriminations by arguments based upon considerations such as those presented in this illustration—discriminations for which the circumstances of time, distance, and amount of traffic afford no justification whatever. While the facts set forth in the illustration just presented should be considered in treating of discriminations, each case must be determined upon its own merits.

(*g*) *The length of haul or distance which commodities are transported is an important element of the cost of transportation.*—Freight which is carried a short distance is very much more affected by the expenses of handling, warehousing, and billing than freight carried a long distance.

The terminal expenses may be the same for the transportation of goods one mile as for a thousand miles.

Mr. O. Chanute, civil engineer, in an article published in 1874 in regard to the elements of the cost of railroad freight traffic, illustrated the manner in which terminal charges affect the cost of hauling a train of 130 tons on the New York Central Railroad, the station-expenses being the same in each case, as follows:

10	miles	cost	4.062	cents	per	ton	per	mile.
20	"	"	2.481	"	"	"	"	"
50	"	"	1.533	"	"	"	"	"
100	"	"	1.216	"	"	"	"	"
200	"	"	1.058	"	"	"	"	"
232	"	"	1.037	"	"	"	"	"
500	"	"	0.963	"	"	"	"	"
1,000	"	"	0.932	"	"	"	"	"

The practical effect of distance in the determination of rates is shown in the following table compiled from facts embraced in a memorial presented to the Wisconsin legislature in 1871 by the presidents of the Chicago and Northwestern and the Chicago, Milwaukee and Saint Paul Railways:

ticular traffic. Full trains could thus be run regularly, insuring the greatest economy of car-service, motive-power, and wages of employés. This is an economic condition very clearly recognized by every railroad manager. The transportation of fresh meats by rail from the West to the seaboard did not become a profitable traffic until it had assumed a magnitude warranting the construction of refrigerator-cars especially adapted to the purpose. Conditions of this nature affect the passenger-traffic of railroads, commutation and excursion rates being based upon the number of passengers which can thereby be secured for single trains.

(*n*) *The cost of transportation is largely affected by the amount of dead weight carried.*—The economy of car-service depends largely upon the exigencies of the traffic of a road and the skill exercised in the management of its equipment under the complicated arrangements and combinations which have sprung up between railroads in order to meet the requirements of commerce.

The ordinary freight-cars of the standard gauge of 4 feet 8½ inches are capable of carrying a load about equal to their own weight, (*i. e.*, 10 tons,) but, owing to the irregularity of traffic and the fact that the tonnage of freights in one direction usually exceeds the tonnage in the opposite direction, the amount of dead weight carried on almost all roads is much greater than the weight of commodities transported.

It is evident that if a given number of loaded cars are hauled over a road, the cost of motive-power, train-hands, and other expenses directly connected with the movement of the train is much less per ton of freight than if the same number of cars are hauled when only half loaded. It is, however, very seldom practicable to load cars engaged in local traffic to their full capacity.

The report of the railroad commissioners of Massachusetts for the year 1875 shows that for every ton of freight carried on the roads of that State there were transported 3.292 tons of dead weight; or, in other words, that the average load was less than one-third of the capacity of the cars.

On the Pennsylvania Railroad, during the year 1875, only 58 per cent. of the space occupied by freight bound eastward, was occupied in the westward movement.

On the main line of the Louisville and Nashville, Railroad during the year 1874, the south-bound tonnage was but 68 per cent. of the north-bound tonnage. But this great loss of effort is not peculiar to railway transportation. It is observable in every branch of human activities. A striking illustration of the loss sustained in consequence of hauling dead weight or unprofitable car-service is presented in a report by the presidents of the Chicago and Northwestern and the Milwaukee and Saint Paul Railways to the Wisconsin legislature. Referring to the Chicago and Northwestern Railway, those gentlemen say:

The actual freight-mileage capacity of the cars on that road, allowing ample time for loading and unloading and for the disability of a liberal number of cars, is about

144,000,000 car-mileages, or 1,440,000,000 ton-mileages, while the actual ton-mileage performed was 212,275,311, which shows that the actual car-mileage was only 15 per cent. of the car-mileage which the equipment required by the fluctuating business is capable of doing, and this percentage is further reduced by the fact that of the actual car-mileage made *about 75 per cent. only* was paying ton-mileage, showing that the total tonnage of the Chicago and Northwestern system is *but* 11 *per cent. of the capacity of the rolling-stock the company is obliged to keep;* or, in other words, were the freight-traffic constant, regular, and in car-loads, 739 *cars would do the same business which now requires* 6,628 *cars.*

The theoretical limit of the economy of car-service can, of course, never be obtained in practice. The proportion of dead-weight carried differs widely on different roads.

(*o*) *The cost of transportation differs greatly on roads on account of the maintenance of the road itself.* The ratio which the cost of maintenance of roadway bears to the total operating expenses on several important roads is shown in the following table:

Roads.	Percentage which cost of maintenance of roads is of total operating expenses.
	Per cent.
Pennsylvania Railroad	22
Lake Shore and Michigan Southern	25
Michigan Central	12
Louisville and Nashville Railroad, main stem	14.453
Railroads of Massachusetts	24.500
Chicago and Northwestern Railroad	14.500
Chicago, Burlington and Quincy	25.500

The cost of the maintenance of a road having few bridges and located in a comparatively level country having a sandy or gravelly soil is very much less than of a road built upon a yielding soil and having heavy excavations and embankments and many bridges. This source of expenditure is of course affected very much by the character of the construction of the road-bed and superstructures.

(*p*) Perhaps the most important of all the considerations affecting the cost of transportation on a railroad is *the skill with which it is managed, embracing both the direction of matters of detail and general administration.*

In the management of the great trunk lines connecting the interior with the seaboard this is the consideration of especial importance. In the course of the contests between the trunk lines when competition runs wild, the general administration of the affairs of a road embraces questions of very great magnitude and of national interest. The proper management of these great trunk lines requires executive ability of a high order and an extensive knowledge of the details of transportation and of commercial affairs.

The circumstances and conditions governing the cost of transportation on railroads which have thus far been mentioned may be summarily

stated as follows: *First*, gradients; *second*, cost of roads; *third*, the wages of labor and cost of material; *fourth*, cost of fuel; *fifth*, effects of frost and snow; *sixth*, volume of traffic; *seventh*, distance; *eighth*, alignment of road; *ninth*, the distinction as to bulk or package traffic; *tenth*, regularity of movement; *eleventh*, nature of commodities, as to their being perishable or fragile; *twelfth*, speed; *thirteenth*, quantity transported of one kind; *fourteenth*, dead weight; *fifteenth*, maintenance of road; *sixteenth*, skill in management. There are other conditions affecting the cost of transportation, of comparatively trifling importance on certain roads, but of very great importance on other roads.

The facts presented clearly indicate the absurdity of tables purporting to give the cost of transportation by rail based upon the single condition of *gradients*. Mr. Albert Fink, in a report on the cost of transportation, has named fifty-eight different elements of cost applying to the management of a railroad, a list of which may be found on page 256 of the Appendix. He has also prepared a formula for ascertaining the cost of transportation per ton per mile, which may be found on page 257 of the Appendix.

Attention is called to an explanatory note appended to this formula, and especially to the remark that "It is necessary to know the fifty-eight items of expense enumerated in order to arrive at a correct estimate of the cost of transportation on railroads."

QUESTIONS OF POLICY IN RAILROAD MANAGEMENT WHICH AFFECT FREIGHT-CHARGES.

Besides the circumstances which have just been mentioned as affecting the *cost of transportation*, there are certain questions of policy based upon conditions, beyond the control of the managers of railroads, which have great weight in the establishment of freight-tariffs. A few of the more important questions of this character may be mentioned.

First. *Questions as to the establishment of freight-tariffs arising from the relative amount of freight in each direction and from considerations as to the advisability of carrying freights, which cannot be made to yield the average cost of transportation.*

There is no railroad in the country upon which the freight-traffic in both directions is equal. Generally, the tonnage of freight in one direction largely exceeds the tonnage in the opposite direction. This is especially the case upon all the trunk railroads connecting the West with the Atlantic seaboard, as indicated by the following facts:

Pennsylvania Railroad, 1875.

Through freight eastward	1,002,072 tons.
Through freight westward	352,131 tons.

The east-bound tonnage on this road appears to be nearly three times as great as the west-bound tonnage.

Boston and Albany Railroad, 1875.

Tons from other States	1,357,794
Tons to other States	301,100

The tonnage from the West into the New England States over this road appears to be about four times the tonnage from the New England States to the States west of the western boundary of Massachusetts.

Lake Shore and Michigan Southern Railway, 1875.

East-bound freight	3,381,876 tons.
West-bound freight	1,640,614 tons.

The west-bound tonnage upon this road appears to have been but 48.5 per cent. of the east-bound tonnage; or, in other words, 51.5 per cent. of the west-bound cars were hauled without loads.

Michigan Central Railroad, 1876.

Through tonnage east	825,450 tons.
Through tonnage west	268,193 tons.

The west-bound tonnage appears to have been but 32.5 per cent. of the east-bound tonnage; or, in other words, 67.5 per cent. of the west-bound car-space was empty.

The relative tonnage east and west over the Mississippi River bridge at Clinton, Iowa, (the crossing of the most important branch of the Chicago and Northwestern Railroad,) was, during the year 1873—

Eastward	336,303 tons.
Westward	94,505 tons.

The west-bound tonnage appears to have been but 28 per cent. of the east-bound tonnage; or, in other words, 72 per cent. of the west-bound cars ran empty.

This circumstance, with respect to the unequal amount of tonnage in the two directions, gives rise to some very important questions in the economy of transportation. Evidently, on a road *which carries all its tonnage in one direction*, the freight-charges must be so fixed that the traffic in that direction shall pay for hauling the cars both ways.

There are many roads in this country upon which the equipment is largely employed in this manner, especially roads engaged in the transportation of coal and other minerals. On many roads cars are used which are especially adapted to a traffic which can only be secured in one direction. But wherever it is practicable to procure return freights of any class, the following question presents itself: *At what rates can freights be carried on the return trip which will afford better results than hauling the cars back empty?*

A few years ago Mr. William P. Shinn, a civil engineer and railroad manager, entered into an investigation as to the cost of transporting

freights on the Pittsburgh and Fort Wayne Railroad, and he arrived at the following conclusion:

I find that an additional car, loaded from Pittsburgh to Chicago and taken back empty, will cost—

Chicago to Pittsburgh, loaded	$43 50
Returning empty	17 00
Cost both ways, (loaded one way)	60 50
Cost both ways (loaded both ways)	87 00
Cost of back load	26 50

So that a rate of 31 cents per 100 pounds from Chicago to Pittsburgh pays for the car going loaded and returning empty, and it is profitable to load it back at any rate over 13¼ cents per 100 pounds.

Or, to state the result in other terms, it was found that upon a road on which the average cost of transportation was 16 *mills per ton per mile*, it would be more profitable to carry return freights at a rate of 5¾ *mills* than to allow empty cars to be hauled over the road on the return trip.

Mr. Shinn also considered the important economic question as to the freight-charges which would justify an increase of equipment and the providing of additional terminal and other facilities in order to accommodate an increased traffic, if such traffic could be procured in the direction of the principal movement of tonnage. The question admits of as many special answers as there are railroads in the country, but the general answer appears to be that traffic may be carried *at any rate which will yield more than the proper charges for the interest on the cost of such equipment, the cost of maintaining and hauling the additional cars over the road, and the cost of the labor required in the management of the additional traffic.*

Mr. L. P. Morehouse, assistant engineer of the Illinois Central Railroad, has investigated the subject here under consideration in a scientific and practical manner. He ascertained, as the result of a careful computation, that the average cost of the freight-traffic of that road was 15.8 mills per ton per mile, and yet he found that a car which would run empty in the direction of the lightest traffic could be profitably loaded with a freight which would yield only the rate of 3 *mills per ton per mile, or only about one-sixth the average cost of the whole freight-traffic of the road.* Mr. Morehouse also ascertained that within the limits of the power of a locomotive an additional car could be added to a train and transported even in the direction of its greatest traffic *at the rate of 4 mills per ton per mile.* He ascertained, moreover, that if the cars on the Illinois Central Railroad could always be run loaded, thus avoiding entirely the hauling of any empty cars, the freight-charges imposed *could be reduced one-half and still yield the same amount of net earnings.*

Mr. Morehouse also, in a somewhat general manner, proved, with respect to the Lake Shore and Michigan Southern Railroad, that, although the average cost of the total freight moved was 9⅕ mills per ton per mile, yet such freight could be carried in cars, which would otherwise run empty, at the rate of only 2½ mills per ton per mile.

Mr. Albert Fink, vice-president and general superintendent of the Louisville, Nashville and Great Southern Railway, ascertained that the cost of transporting freight on that road *may not exceed one-seventh of one cent* (1.43 mills) *in certain cases where cars would otherwise run empty;* or, in other words, that a rate at all in advance of one-seventh of a cent per ton per mile would pay the expenses of hauling freight in cars which would otherwise return empty, the average cost of transportation on the road being *nearly ten times this rate, or* 1.3 *cents per ton per mile.*

Evidently, therefore, the question which presents itself to the mind of a railroad manager with regard to the acquisition of additional traffic is not, *Will such traffic pay the average rate of conducting the entire traffic of the road?* but *Will it yield any profit beyond the cost of handling and hauling and the incidental expenses properly applicable to it?* It is not a question as to whether the traffic will or will not bear its full proportion of the total expenditures of the road, but as to whether it will or will not form *a profitable adjunct to the existing traffic.*

Considerations such as these have led many companies to compete for a traffic for which there were shorter lines with easier grades and superior facilities of all kinds. In such cases the shorter roads may regard the competitive traffic as an integral part of their general traffic, and be inclined to adjust their freight-charges accordingly. The less favorably situated competitors, regarding the competitive traffic as a mere adjunct to their principal business, may, on the other hand, be inclined to secure a share of it if it will yield *any margin of profits beyond the mean operating expenses especially chargeable to it.*

During the last five or six years the least favorably situated of several competing roads has oftentimes determined the rates which have been agreed upon as the result of a "railroad war," the roads upon which the cost of transportation was least reducing their rates upon such compulsion. A striking illustration of this has for several years been presented in the course of the contest between the New York Central and the Grand Trunk Railways for the traffic between the Western States and the New England States. The Boston and Albany Railroad, the New York Central Railroad, and the western connections of the latter road, form the shortest and least expensive line between Boston and Chicago, yet for years the Grand Trunk road has competed with this shorter line upon the condition that it should be permitted to charge 10 per cent. less than the New York Central in order to enable it to secure a share of the through traffic. The force of this illustration will be clearly perceived by referring to maps Nos. 3 and 4 at the end of this report, the former representing the Grand Trunk Railway with its Vermont Central connections permeating all parts of the New England States, also the western connections of the Grand Trunk Railway; and the latter (map No. 4) representing the New York Central Railway with its New England and its western connections.

A very striking illustration of the policy of engaging in traffic which

will merely yield a profit beyond the additional expenses incurred by engaging in it has been presented during the last six years in the competition which has been going on between the trunk railroads connecting the West with the Atlantic seaboard and the Lake, Erie Canal, and Hudson River water-route. At the time when the railroads first began to engage in the transportation of grain and other heavy products of the West, the rates on the lakes and on the Erie Canal were very much below the average cost of transportation upon the railroads. For several years, however, the roads had been carrying all the better paying freights of the higher classes. The managers of certain of the east and west trunk lines at last determined to engage in the transportation of grain and other heavy freights at rates below those obtainable on the classes of commodities then carried, upon the ground that the receipts from such freights would form a valuable adjunct to the principal business of their roads, or, in other words, that such receipts would more than cover the additional expenses incurred.

How far this policy of supplementing the more profitable traffic of a road by additional traffic at very low rates may be pursued is a nice question, both in theory and in practice.

The failure to appreciate the possible effect of the competition of longer lines has led to serious mistakes in railway construction. Roads forming shorter lines than any existing roads have been constructed between certain points with the expectation that the advantage of distance alone would enable them to control the through traffic; but it has been subsequently found that the longer lines were able to retain a full share of the traffic, and perhaps by virtue of other favoring circumstances, such as the magnitude of the total traffic, cheaper construction, cheaper fuel, or more skillful management, the longer lines have been able to carry the traffic for less than the cost of carrying it over the shorter line. Circumstances such as these have tended greatly to multiply the elements of competition and to afford to the public cheap rates of transportation.

Many railroads in this country are actively engaged in the transportation of certain heavy commodities of low value at rates below the *average* cost of transportation, the traffic, however, yielding better net results than refusing to engage in it.

Second. There are questions of policy based upon the relations sustained by the railroads to each other and to the commerce of the country, or, in other words, questions growing out of the competition of rival roads and of rival markets, which affect the establishment of freight-tariffs. Circumstances of this character present themselves under a great variety of forms, and it is impossible to ascertain their value with any degree of precision. The questions to which they give rise are practical rather than theoretical. The interests of the great trunk lines, as well as of almost all lines of less importance, are very closely identified with the interests of certain commercial cities. The merchants of the chief

commercial cities seek trade throughout extensive portions of the country. Every State is thus brought within the range of the competition of two or more commercial centers. A road terminating at one city must of necessity so fix its freight-tariffs that the charges for the transportation of competitive traffic shall not be so much greater than those enjoyed by a rival city as to discriminate against its trade; otherwise a deflection of commerce might take place and the road leading to the former city would in the end sustain a loss of business. This is the cause which, lying behind more immediate and apparent causes, has been the controlling condition during those contests which have been waged between the great trunk lines connecting the West with the seaboard.

This subject is treated of somewhat at length in the section of this report entitled "The competitive forces which exert a controlling influence over the movements of the internal commerce of the United States."

The more important questions of policy which present themselves to the mind of the railroad manager in the ordinary course of business and during those struggles in which at times he engages with rival railroad interests may be summarily stated as follows:

1. What must be the average rate on the total traffic in order that it may yield sufficient net income in order to meet all the expenses of operating the road, together with interest upon its outstanding obligations?

2. What rate will yield a profit, however small, beyond the expenses, strictly applicable to the mere handling and moving of freight?

3. The tonnage of a road being largely in one direction, at what rate may freights be profitably carried in cars which would otherwise run empty?

4. A road being constructed and in operation, at what rate will it be profitable to procure the requisite equipment and other facilities in order to secure traffic, which cannot be secured at a rate equal to the average rate which must be obtained from the total traffic?

5. What rates will the markets bear?

6. What rates must be established in order to maintain a position or to gain an advantage during a war of rates?

These considerations indicate that the expression "profitable rates" is one which in practice has several distinct significations, dependent upon both constant and variable quantities. It is quite as important that the railroad manager should understand the bearing of each of these questions upon the interests intrusted to his care as that he should be informed in regard to the actual average cost of conducting the total traffic of the road.

The subject presents a broad field for investigation, and there is a very great demand, both in the interests of the public and of the proprietors of railroads, that a better understanding of it should be attained.

The foregoing remarks in regard to the cost of transportation, and to questions of policy affecting freight-rates, are presented with the

board with respect to the commercial interests of Boston, New York, Philadelphia, and Baltimore."

The Erie Canal was originally but 40 feet wide and 4 feet deep, with a single line of locks, admitting the passage of boats of 76 tons. It has, however, been enlarged to a width of 170 feet and a depth of 7 feet, with double locks of sufficient capacity for boats of 240 tons. The present maximum capacity of the canal is far beyond the demands of the commerce upon it. The enlargement of the Erie Canal is said to have reduced the cost of transportation upon it about 50 per cent.

THE MISSISSIPPI RIVER.

Before the introduction of railroads the Mississippi River and its navigable tributaries formed the only line of transportation to the Gulf ports for the products of a large part of the territory now comprising the Western and Northwestern States. The city of New Orleans became the exclusive sea-port for this extensive river-commerce, and for many years held a commercial position similar to that held for nearly a quarter of a century by the city of New York by means of the commercial highway formed by the lakes, the Erie Canal, and the Hudson River. But already several trunk railroads have been completed which constitute important highways of commerce between the Western States and the Southern States. The construction of these roads is rapidly producing changes in the course and conditions of commerce. Freights, such as were formerly shipped to New Orleans, Galveston, and Mobile, and thence to the North Atlantic States, are now to a very considerable extent shipped directly east by rail to Savannah, Charleston, and Norfolk, or seek the direct, all-rail "overland route" by rail from the Gulf States, crossing the Mississippi and Ohio Rivers, and thence passing over the great east and west trunk lines. Commodities are also shipped from the Atlantic States to the Gulf States over the same routes. But the Mississippi River is still and will always continue to be the most important avenue of commerce between the West and the South, not only with respect to the commerce actually carried upon it, but in the influence which it will ever exert toward regulating rates on competing rail-lines, especially for the transportation of the heavier commodities comprising the lower classes of freight and embracing agricultural products, lumber, minerals, &c.

This subject is treated of more at length in the section of this report entitled "The regulation of railroads through the competition of water-lines."

(*a*) *The Mississippi River above Saint Louis.*—Navigation on the Mississippi River between Saint Paul, Minn., and Saint Louis is subject to great fluctuation with respect to its navigable condition. During four or five months of the year this portion of the river is navigable for the larger class of boats employed on the principal tributaries of the Mississippi River, but at times it falls to a depth of only 3 to 3½ feet.

The Keokuk Rapids, 7.6 miles in length, have been overcome by the construction of a canal extending along the Iowa shore, and the Rock Island Rapids have been improved by means of excavating the natural channel so as to give a navigable passage 200 feet wide and 4 feet deep at extreme low water.

The Mississippi River above Keokuk, Iowa, is generally closed by ice about four and a half months in each year.

(*b*) *The Mississippi River below Saint Louis.*—The Mississippi River is navigable almost constantly from Saint Louis to New Orleans, a distance of 1,250 miles, for steamers and barges of the largest size. Occasionally navigation is obstructed during short periods on account of ice or low water. This section of the river, however, constitutes an invaluable commercial highway, sufficient for all the demands of commerce. The Mississippi is navigable for ocean-vessels of the largest size to Vicksburgh, and at times as far up as Memphis, but sea-going vessels seldom pass above New Orleans.

The general character of the navigation of the Mississippi River from Saint Louis to New Orleans is stated in the following table:

Average stage of water each year for nine years.

Number of days less than 4 feet	34
Number of days over 4 feet and less than 6	52⅔
Number of days over 6 feet and less than 8	103⅔
Number of days over 8 feet and less than 10	69⅓
Number of days over 10 feet	136⅔

There is great need for the improvement of the navigation of this section of the river, by the removal of snags and bars, improvements which can be made at a cost trifling in comparison with the value of the commercial interests to be subserved.

(*c*) *Mouth of the Mississippi River.*—The Mississippi River from New Orleans to the point where it separates into several "passes," forming its delta, has a depth of nearly 100 feet, yet at the mouth of each of these outlets or passes there are bars formed by the deposit of sediment, causing serious obstructions to navigation. The depth of water here varies from 12 to 16 feet. This has been the condition of the passes for many years, and it appears to be the regimen of the river under the action of natural forces.

So long as commerce upon the ocean was principally carried on in vessels not exceeding 400 or 500 tons burden and drawing from 10 to 14 feet of water, these bars presented no serious obstacle to the commercial prosperity of New Orleans; but within the last twenty-five years the size of vessels engaged in ocean-commerce has been greatly increased. Commerce upon the ocean is now largely carried on in vessels of from 1,000 to 5,000 tons, with a draught of water of from 16 to 23 feet, experience having proved the economy of vessels of this class for long ocean-voyages. Especially is this true with respect to ocean-steamers. Vessels of smaller size are now confined chiefly to the coastwise trade

and to trade with foreign ports of minor importance. As a natural result of this change in the size of sea-going vessels, the great sea-ports which are not accessible to ships of the larger class are doomed to commercial decadence. This has been the unfortunate position of New Orleans during the last ten years on account of the obstructions to navigation at the mouth of the Mississippi River.

For several years the Government has annually appropriated sums averaging about $200,000 per annum for the purpose of employing dredging-boats at the entrance to the Southwest Pass. By this means a channel has been secured ranging from 15 to 20 feet in depth and from 50 to 200 feet in width. This is, however, an insufficient and very unreliable expedient. The storms which sweep over the Gulf of Mexico oftentimes obliterate every vestige of the channel formed by the dredging-boats, and the work of opening a channel has to be repeated. Several plans were proposed for securing a deep channel to the Gulf.

Finally, by the act of Congress of March 3, 1875, James B. Eads, an eminent civil engineer of Saint Louis, was authorized to improve the mouth of the South Pass by means of jetties extending into the Gulf beyond the crest of the bar forming the impediment to navigation. The works now in process of construction were begun on the 17th of June, 1875, and have been prosecuted vigorously ever since. The jetties now extend from the land's end into the deep waters of the Gulf, confining and controlling the waters of the pass so that the depth across the bar, which is two and one-quarter miles in width, has been increased from about 8½ feet (the depth before the work was commenced) to a wide channel with a depth of 21 feet. The attainment of the required depth of 30 feet is believed by eminent engineers who have officially examined the works to be only a question of time. The success of the jetty-system is believed to have been fully demonstrated.

While the commercial advantages which will be realized from the success of this enterprise will be of incalculable value to the city of New Orleans and to the entire valley of the Mississippi, embracing 1,200,000 square miles of territory, it will also, as an achievement in civil engineering, probably be of great value as developing a practicable method of improving the mouths and channels of sediment rivers and of protecting the alluvial shores of such streams.

During the past year many of the largest steamers and ships plying to New Orleans have used the jetties in entering the Mississippi, finding a much safer, wider, and deeper entrance than has ever before been secured in any of the other entrances to the river. The consolidation and permanent completion of the jetties will soon be commenced and prosecuted as rapidly as possible. If the hopes entertained in regard to the jetties shall be fully realized, the port of New Orleans will be placed upon an equality with the most favorably-situated ports of the globe with respect to the facilities of navigation, and there seems to be no doubt that its commerce will thus be largely increased.

This result will also be of incalculable advantage to the entire commercial interests of the Mississippi River and of the States bordering upon it and its tributaries.

THE MISSOURI RIVER.

The Missouri River is navigable to Fort Benton, in the Territory of Montana, for steamers of the smaller class. Navigation on this river is however confined to four or five months each year during favorable stages of the river. Since the construction of the Central Pacific Railroads and the railroads leading west from Saint Louis, the traffic on the Missouri River has decreased.

THE OHIO RIVER.

The Ohio River, like the Upper Mississippi and the Missouri, is subject to great fluctuations as to its navigable stage, but it is much less obstructed by ice. It is an exceedingly important commercial highway, not only as a competitor of the railroads with respect to the transportation of general freights, but especially as being the only practicable highway for the transportation of coal from the vast coal-fields of Pennsylvania and West Virginia to points below as far as New Orleans. At the present time the city of Pittsburgh is the principal center of the coal-trade of Western Pennsylvania. The shipments of coal by river from that city during the year 1876 amounted to 62,395,000 bushels, or 2,495,800 tons.

The value of the steamers, barges, and boats owned at Pittsburgh and employed in the coal-business is estimated at $5,000,000. Almost all the coal consumed in the cities and towns on the Mississippi River and its navigable tributaries below Saint Louis is obtained from this section. The steamers on the Mississippi River and the ocean-steamers from New Orleans also depend upon this source of supply. During a single rise in the river 46 fleets, comprising 369 barges and carrying 4,156,000 bushels of coal, have left Pittsburgh within the space of three days.

The Ohio River is subject to greater fluctuations as to its depth of water than any other tributary of the Mississippi. The extreme rise and fall at Cincinnati is 62½ feet. Its descent from Pittsburgh to Cairo, a distance of 963 miles, is 426 feet. In consequence of this great descent the velocity of the current is from 1½ to 3½ miles per hour. The coal-tows of Pittsburgh, consisting of barges and the steamers which propel them, require a depth of 6 feet of water in order to pass down with safety. These tows and fleets of tows also require a wide channel in order that they may be navigated safely and economically.

As the Ohio River above Cincinnati sometimes falls to a depth of about two to three feet, navigation on that portion of it is oftentimes suspended for several months. At and below Cincinnati navigation generally continues either for the larger or smaller class of steamers about eleven months each year. For the transportation of coal, iron-

ore, and other minerals, the Ohio River is an invaluable commercial highway. The cost of transporting coal from Pittsburgh to Louisville and to New Orleans is *about one-half of one mill per ton per mile.* This is only one-ninth of the rate which prevailed during several months of the past year for the transportation of grain from Chicago to New York, viz, 20 cents per one hundred pounds, or 4½ mills per ton per mile, a rate less than almost any other rail-rate known in this country, and believed to have been unremunerative, and maintained only as the result of a railroad war.

The importance of the Ohio River as a commercial highway may be appreciated when it is considered that many towns and cities in the Western and Southwestern States are in a great measure dependent upon a cheap supply of coal from Western Pennsylvania and West Virginia, and that bordering upon the upper waters of the Ohio there are coal-fields embracing a territory of 122,000 square miles, an area nearly nine times as large as the coal-fields of Great Britain, France, and Belgium combined.

The Louisville and Portland Canal.—The Louisville and Portland Canal, around the Falls of the Ohio, at Louisville, Ky., is one of the most important public improvements ever undertaken by the Government of the United States. This work has cost $3,288,603, but the commercial advantages realized from it in a single year have greatly exceeded this large expenditure. Within the last two years the United States Government has secured the entire control of this work, and the tolls for the passage of boats through it have been reduced from 50 cents to 10 cents per ton, boat-measurement. This has afforded great relief to the immense coal-traffic of the Ohio River.

Much valuable information in regard to this work and in regard to the commerce of the Ohio River may be found in the statements presented to this Department by Mr. Sidney D. Maxwell, secretary of the Chamber of Commerce of Cincinnati, Ohio, and by Mr. C. H. Pope, of Louisville, Ky. (Appendix, pages 114 and 199.)

THE CUMBERLAND RIVER.

The Cumberland River, from its mouth to Clarksville, Tenn., is navigable during the entire year for boats of 12 inches draught, during about ten months for boats of 21 inches draught, and during eight or nine months for boats of 3 feet draught.

Light-draught boats requiring only from 10 to 12 inches of water can generally run to Nashville nearly the whole year, and boats of from 16 to 20 inches draught can run for about six months (from December to June) each year. Light-draught boats run to Point Burnside, 125 miles above Nashville, during the whole year, and to the crossing of the Cincinnati Southern Railway, 450 miles above Nashville, during six months in the year, viz, from about December 1 to June 1. The low rates on competing railroads have tended to divert much traffic from the Cumberland River.

TENNESSEE RIVER.

From the mouth of the Tennessee River to Eastport, 15 miles below Florence, Ala., boats drawing about 3 feet of water can run during the whole year, and from December to June such boats usually run as far as Florence, Ala. From Florence to Decatur, 12 miles, navigation is interrupted by the Muscle shoals. From Decatur to Guntersville, 325 miles, boats run during the whole year, but between Decatur and Bridgeport only for about ten months of the year. Boats very seldom pass from Bridgeport up to Chattanooga, on account of obstructions in the river. Between Chattanooga and Kingston (about 100 miles by land from Chattanooga) boats are run the entire year, and between Chattanooga and Knoxville for about ten months each year.

During the winter-months steamers navigate the Hiwassee River as far up as Charleston; the Clinch River, above Kingston, a distance of 30 or 40 miles, and the Little Tennessee River as far up as the mouth of Tellico River. Sometimes boats pass up the Holston and French Broad Rivers. The products of East Tennessee above Knoxville are generally shipped on flat-boats.

The United States Government is now constructing a canal around the Muscle Shoals of sufficient size for the passage of steamboats. Considerable progress has also been made within a few years in the improvement of the river above Chattanooga.

The two interruptions to the navigation of the Tennessee River, viz, the Muscle Shoals, and the shoals between Bridgeport and Chattanooga, now destroy the value of the Tennessee River as a line of transport from the head of navigation to its intersection with the Ohio. Below Decatur, however, the Tennessee affords the benefits of competition to the various railroads connecting the States of Tennessee and Kentucky with the Gulf States, and to this extent it is of considerable commercial importance. The construction of the Muscle Shoals canal and the improvement of the river both above and below these obstructions will afford the means of developing vast coal and other mineral resources in the northern part of the States of Georgia and Alabama and in the eastern section of the State of Tennessee.

THE ARKANSAS RIVER.

The Arkansas River is navigable for large steamers to Little Rock, Ark., and beyond the western border of the State for steamers of a smaller class, during favorable stages of the river. The commerce of the territory of which it was formerly the chief line of transportation is now, to a large extent, shared by railroads extending west from the Mississippi River and also by the two lines extending in a southwesterly direction from Saint Louis to the State of Texas.

THE WISCONSIN AND FOX RIVERS IMPROVEMENT.

The extension of a northern water-line to the Mississippi River by

the construction of the Wisconsin and Fox Rivers improvement is a work especially worthy of notice, it being now under the ownership and control of the United States Government. A large amount of money has already been expended upon it. It is believed that this line will become a valuable competitor to the railroads connecting the States of Iowa and Minnesota with Lakes Superior and Michigan.

It is believed that an expenditure of about $3,000,000 will be required in order to complete the enterprise. The improvement embraces a canal across a portage of only 1½ miles in width, separating the Wisconsin and Fox Rivers, the improvement of the Fox River by means of slack-water navigation, and the improvement of the Wisconsin River by means of slack-water navigation, by contracting its channel at certain points, or by the construction of a canal from the portage to its mouth, as the engineers in charge may determine.

The locks on this line of improvement will be 160 feet long, 35 feet wide, and have a depth of water in the canal-portions of 3 feet, admitting the passage of boats of 500 tons. The Erie Canal has locks 110 feet long, 18 feet wide, and a depth of 7 feet, admitting the passage of boats of only 200 tons. It is intended that barges, such as are employed on the Mississippi River, shall pass through the Wisconsin and Fox Rivers improvement from the Mississippi River to the head of Green Bay.

The merits of this enterprise are very fully set forth in the report of the Senate Committee on Transportation. (Report 307, Forty-third Congress, first session.)

GENERAL REMARKS IN REGARD TO WATER-LINES.

The United States Government has already expended a large amount of money in the improvement of the rivers and harbors and of navigable waters within the United States. Valuable commercial results have already been realized from these expenditures, and it is believed that much more valuable results may be realized from the judicious expenditures of money in the same direction.

In addition to the water-lines already mentioned, there are certain projected lines which have engaged public attention. These are: *first*, the proposed Caughnawaga and Champlain Ship Canal; *second*, the Oneida Lake route from Oswego to Troy, N. Y.; *third*, the James River and Kanawha Canal, or Central Water-line from Richmond, Va., to the Ohio River; *fourth*, the Atlantic and Great Western Canal from Guntersville, on the Tennessee River, to Macon, Ga., in connection with slack-water navigation on the Coosa River, and the improvement of the Chattahoochee River from Macon to its mouth; and, *fifth*, the Rock Island and Hennepin Canal. These and other projected water-lines are fully treated of in the report of the Senate Committee on Transportation (Senate Document No. 307, Forty-third Congress, first session.)

All the water-lines hereinbefore mentioned are delineated on map No. 2, at the end of this report.

5. THE COMPETITIVE FORCES WHICH EXERT A CONTROLLING INFLUENCE OVER THE MOVEMENTS OF THE INTERNAL COMMERCE OF THE UNITED STATES.

The subject of competition presents itself under two very important aspects: first, as a force controlling or exercising a strong influence over the movements of commerce, and, second, as a regulator of freight-rates. It is not proposed to enter here upon an exhaustive discussion of the question as to how far competition may be relied upon as a regulator of rail-rates, nor is it proposed to investigate fully the question as to how far competition produces or checks discriminations in freight-charges; for, under different circumstances, it tends to both these results. The subject can only be considered in a somewhat general manner.

Competition exists under very complicated conditions with respect to the "through traffic" between different sections of the country, and in so far as relates to the end of securing cheap transportation it is an effective, although not an absolute, regulator of through rates. It does not prevent certain discriminations with respect to the interests of rival commercial centers, nor does it prevent exorbitant local rates or discriminations against local traffic. In certain cases, combination in a great degree suppresses competition, but it has been found that where there are many competing lines, these lines have so few interests in common that it is very difficult to maintain agreements as to competitive rates. The trunk lines at all times engage in through traffic at rates very much below those which prevail where there is little or no competition, and in some cases, they are forced to engage in competitive traffic at an absolute loss.

Generally it may be said that the competition of rival lines and of rival markets is much less effective as a regulator of local than of through rates; but in regard to a very considerable proportion of the local traffic of the country the influence of the competition of product with product in various degrees limits rates. In many cases the competition of the markets exerts but little influence, and between the extremes of the influence of this competition over both through and local rates, it asserts itself in every gradation of force and under an almost infinite variety of circumstances.

As the local traffic of railroads constitutes a very much larger proportion of the commerce of the chief Atlantic sea-ports than does their commerce with the Western and Northwestern States, it is evident that the railroad problem presents to each of those cities many questions of vital importance, which cannot be considered in a report especially devoted to the commercial movements between States and between different sections of the country, and the circumstances and conditions which characterize those movements.

The present consideration of the results of competition relates to *some things which it does, rather than to what it does not do.* The latter subject opens an almost illimitable field for inquiry and discussion.

COMPETITION.

As soon as it was realized in England and in this country that the safe and economical management of a railroad rendered it necessary that the work of the common carrier should be performed by the management of the road itself, it was confidently predicted that the power of the railroad companies would eventually become so great and their control over the commercial and industrial enterprises of the people so absolute that it would become necessary for the state to govern the railroads in order to prevent the railroads from governing the state. Notwithstanding the fact that many of the evils apprehended have exhibited themselves in different degrees, experience has proved that the system contains within itself certain conservative elements, which, in the more advanced stages of railroad extension, assert themselves as regulating forces, although not to the extent of preventing all discriminations or of correcting all the abuses which have from time to time arisen. But this much is not to be expected in the course of human affairs, either as the result of the untrammeled action of natural forces or as the product of any scheme of adjustment.

At an early day in the history of railway legislation, the Duke of Wellington uttered this word of warning in the British Parliament: "Beware, my lords, lest in legislating in favor of railroads you lose sight of the old English idea of the highway." But the *freedom* of the highway, in the sense in which the term is employed with reference to transportation on wagon-roads, on canals, on rivers, and upon the ocean, has been entirely eliminated from railroads, and yet many of the evils apprehended have not been realized under the privileges and powers of independent corporate ownership. Monopoly has not strangled commerce, for competition, the natural regulator of values, has appeared under new conditions, and in the determination of rates for the transportation of both passengers and freights it appears to have kept pace with the development of the possibilities of the railroad system, although, as just stated, not to the extent of preventing all abuses.

Experience has proved that the system under which the entire freight and passenger traffic of railroads is conducted by the management of the railroad companies themselves, as common carriers, has been the most important condition under which the present advanced state of railway transportation has been attained. Regularity of movement, reduction in cost, security, accountability, dispatch—all these invaluable results are due to this peculiar feature of the system at first believed to be fraught with such serious evils.

Some of the features of monopoly always have and perhaps always will attach to the railroad system, but they will continue under certain restraints growing out of the competition between rival transportation-lines, and between rival markets. As we have also seen, these restraints

operate under widely different conditions with respect to what are known as "competitive" and as "local" traffic.

During the first twenty years of railway construction in the United States there were comparatively few competing railroads. The companies sought new routes, where they could enjoy exclusive privileges. But in the course of a few years competing lines were constructed between the important centers of trade. In certain cases rival companies, seeing that competition would be disastrous to both, entered into combinations as to the rates which should be maintained. In other cases the two roads were consolidated under one ownership. This led to the impression that eventually there would be no effective competition between rival roads. George Stephenson, the father of the railroad system of Great Britain, expressed the opinion that "wherever combination is possible competition is impossible," and the inference was generally drawn that competition may always be suppressed by combination. Experience has proved the fallacy of this idea. Perhaps the most extensive combinations and consolidations of railway interests in the world are those which have been formed by the trunk lines connecting the Western and Northwestern States with the States of the Atlantic seaboard. These combinations and consolidations were originally entered into by the various railroad companies for the purpose of controlling commerce between the East and the West; but it is well known that the most ungovernable competition is that which now exists and which has existed for several years between those great rival trunk lines, and it is also a fact that the rates which have for several years prevailed upon those roads have been the cheapest rail-rates known in this country, and perhaps in the world. Strenuous efforts have been made by the managers of the trunk lines to advance competitive rates and even to maintain very moderate rates, but oftentimes unsuccessfully. Competition between the trunk lines and their various connecting lines, and other forces beyond the control of the managers of those lines have thwarted their efforts, and the result has been that the cheapness of through rates enforced upon these great companies has given rise to complaints of unjust discrimination with respect to rates between points where the commercial advantages of competition do not exist. It is averred that the great trunk lines have, during the last two years, engaged in the competitive traffic between the West and the seaboard at rates below the actual cost of transportation.

As the results of the efforts of the promoters of railway consolidations and combinations, we now see that it is impossible for these great trunk lines to combine for the determination of rates, *except as to certain classes of traffic and within limits imposed by the economies of transportation and by commercial forces beyond their control.*

CIRCUMSTANCES WHICH TEND TO REGULATE RAIL-RATES.

Let us consider briefly some of the forces which in practice tend to

regulate freight-charges on American railroads in so far as relates to the great commercial movements between the West and the seaboard.

First. Between each of the principal commercial cities of the West and each one of the chief Atlantic sea-ports there are several competing lines formed by the trunk roads and their connections. One or more of these lines may regard the through traffic between certain centers of trade as a principal source of revenue. Other lines may regard it as *a mere adjunct* to their local business or as an adjunct to their more important through traffic between other points. In the latter cases the companies may be satisfied with *any rate which will yield more than the mere cost of handling and hauling, and therefore be inclined to compete for the traffic at very much lower rates than the managers of other roads would desire to maintain.*

Again, take the case which in practice has almost innumerable illustrations. Between two centers of trade there are several competing lines differing widely as to distance, grades, and amount of traffic, and as to all the other conditions determining cost of transportation. It oftentimes occurs that the managers of the longer or more unfavorably situated lines see clearly that they can secure a share of the traffic only by taking it at rates below those prevailing on the more favorably situated roads. Unless the demands of the managers of the longer lines are complied with a railroad war ensues, with the inevitable result that all the roads are subjected to very much greater losses than would have been sustained even under the terms of an agreement which might not have been deemed altogether satisfactory to any one of them.

Second. The financial condition of railroads has an important bearing upon the question as to the rates which may be charged under certain circumstances. In the case of the competitive business between a commercial center at the West and an Atlantic sea-port, several of the lines pay dividends upon their stock, and they require certain rates of transportation in order to meet dividends and the interest upon their bonded indebtedness. There are other roads which can barely pay interest upon their bonds. There are also competing roads which are in a condition of bankruptcy, being unable to pay even the interest on their bonds. These roads, while struggling for existence under some form of compromise or of financial adjustment, are willing to take freights at rates very little in advance of the mere cost of moving them. About the first of March, 1876, a practical example of this sort was presented on a very large scale. The trunk lines from Chicago to the East (all solvent roads) formed a combination upon the basis of "pooling" earnings. Their efforts to fix the rates on grain were, however, defeated by the competition of certain bankrupt railroads south of Chicago, having connections with almost all the western railroads. The strategic position held by these bankrupt roads as the result of their low financial condition enabled them to drive their more prosperous competitors from a chosen position.

Third. *The competition of product with product in the markets of the country* is in some cases an effective restraint upon freight-charges, while in other cases it exerts practically but little influence, but in all cases it exerts in some degree a restraining influence upon rates. The trade-forces of the country are oftentimes stronger than the power exercised by the railroad companies with respect to traffic between the more important centers of trade.

Either directly or indirectly, the markets of every commercial city bring to bear upon the freight-rates of each one of the railroads tributary to it the competition of all the other tributary roads, as well as the competition of all the railroads tributary to rival commercial cities. This is a fact which forces itself upon the notice of the managers of every railroad in the country and which is recognized by them as establishing limits within which their discretionary powers with respect to competitive traffic are restrained. The degree of control exercised by every commercial city over the movements of any particular commodity depends upon many circumstances, among which may be mentioned the magnitude of its total commerce, the amount of its available capital, the energy, tact, and enterprise of its merchants, its geographical position, and its various facilities for transportation, including both rail and water lines.

In some cases railroad managers exercise a very wide discretion in the establishment of freight-charges, and in other cases their powers are restrained within very narrow limits. But the commercial forces always assert themselves. The competition of product with product in the various markets is widely diffused and presents itself under many varied aspects. The markets cannot enter into any sort of combination among themselves or with railroad interests. Although oftentimes dormant, the competitive influence of trade always asserts itself over transportation-lines. It is a statical rather than a dynamical agency.

The construction of railroads throughout the United States has vastly extended the geographical limits of the trade of commercial cities. The territory tributary to the commerce of each city overlaps the territorial limits of the commerce of several other cities. This has led to very marked results in commercial affairs. For example, competition between markets and between transportation-lines brings to New York certain products of Illinois and Iowa at rates little in advance of the rates upon the same commodity from local points within 100 miles of that city. Thus railroads have in a very striking manner tended to diminish the effect of distance as an element of the cost of transportation and to equalize values throughout the country.

With respect to the through traffic between the West and the seaboard the combined trade and transportation forces determine the maximum limit of the charges which can be imposed by the feeblest of the bankrupt connections of through lines, and to almost the same extent they determine the rates which can be charged by that gigantic organization,

the Pennsylvania Railroad Company. The competition between markets is so closely intermingled and presents such a variety of phases that it is oftentimes impossible to define the relative influence of any particular market. The following statements in regard to actual commercial movements in the United States serve to illustrate the influence of the competition of rival lines and of rival trade-forces over freight-rates on railroads engaged in what is commonly known as "through traffic."

(*a*) The competition between New York, Philadelphia, Baltimore, Chicago, Saint Louis, Louisville, Cincinnati, and other trade-centers in a great measure controls freight-rates on all the lines engaged in transportation between the West and the seaboard, as well as ocean-rates in our coastwise trade and in our trade with other countries. A single illustration in proof of this fact may be given:

There are not less than twenty different lines or combinations of lines over which grain produced in the Western States can be transported to the cities of New York, Boston, Montreal, Philadelphia, and Baltimore. Some of these are all-rail lines, others are rail and water lines combined, and there is also the Lake, Erie Canal, and Hudson River route. The lines to each one of these cities compete with each other, and in consequence of the identity of their interests with the interests of their respective seaport termini, compete with the lines to all the other ports.

There are also at all of these sea-ports one or more ocean-steamer lines to Europe, which compete with each other quite as sharply as do the railroads. The rates which can be obtained both on the internal and on the ocean lines of transport are therefore governed by the competition between all these lines, as well as by the grain-markets of the various Atlantic sea-ports of the United States and the grain-markets of Europe.

England is our chief grain-market, but she also receives grain from Russia, Turkey, Austria, Egypt, Spain, Portugal, Morocco, South America, and Australia. The price of grain in the English market is regulated by the available supply from all these countries and by the freight-rates which prevail from each country to England. All these competitive elements of commerce and of transportation react upon the railroads and interior water-lines of the United States and to a certain extent constrain the railroad manager in the adjustment of his rates on grain. Thus the condition of the grain-markets of Europe and the ocean-rates on grain from Russia to England may exert a potential influence over the rates which can be charged on a branch road in one of our Western States.

(*b*) The effect of the competition of the markets upon railroad freight-tariffs may, however, be illustrated in special cases as well as in this world-wide competition. Suppose, for example, a grain-market at A having several roads leading into it from B, C, D, and E, each one of which engages in the transportation of grain from all points on its line. Evidently on no one of these lines to the common market A can the rates be advanced very much beyond the rates which prevail on the other

lines, as the effect of such an advance would be to check production and reduce traffic on that line. Thus railroads compete with each other through a common market, and the commercial forces are found to be to a certain extent regulators even of that local traffic over which railroad managers are sometimes supposed to exercise absolute control.

(*c*) Upon this subject Col. Milo Smith, of Clinton, Iowa, in a letter to this office says:

The competition is between cities rather than between roads, and for that reason no combination among the roads can ever last very long.

(*d*) Mr. Albert Fink presents an illustration of the competitive power of markets as follows:

Nashville is a manufacturing point for flour, and its chief southern market is Atlanta. Saint Louis and Chicago are also important centers of the flour-trade and compete for the trade of the entire Southern States, Saint Louis having the advantage over Chicago, on account of shorter rail-lines to the south and of transport by river. The average rate of transportation from Nasvhille to Atlanta is 72 cents per barrel of flour, and therate from Saint Louis to Atlanta is $1.16. In case the Saint Louis rates are reduced to 65 cents, which may be considered a "war-rate," the Nashville rate must of course be reduced proportionately, or else Nashville flour will be excluded from the Atlanta market. The interests of the Nashville manufacturers and merchants and the railroads carrying flour from Nashville must otherwise suffer. And as there would be no market for wheat raised on the various roads centering in Nashville which carry it to that point as a part of their local traffic, the local rates on these roads must also be reduced in order to prevent the distant market of Saint Louis from destroying the Nashville trade. Thus competition between markets induces competition between transportation lines which do not come within 300 miles of each other.

(*e*) In March, 1876, a "pooling" arrangement was entered into by all the great trunk lines which, with their connections, operate between Chicago and the East. Soon afterward the rates to eastern points from Milwaukee across Lake Michigan, and thence by the Detroit and Milwaukee and Grand Trunk Railroads, (both in a condition of bankruptcy,) were so reduced as to be 10 cents less on a barrel of flour from Milwaukee than from Chicago. The rates on grain were also made less from Milwaukee than from Chicago. The rates on certain east and west lines south of Chicago—also bankrupt—were, as before mentioned, made less than the rates via Chicago from points farther west. The result of these discriminations was to cause the products of the Northwest to avoid the Chicago market. The competition of the trunk lines both north and south of Chicago, in connection with the direct competition of eastern markets as against the Chicago market, threatened to make serious inroads upon the trade of that city. If these discriminations had continued, the interests of Chicago would have greatly suffered. But the competitive influences centering there did not permit this condition of affairs to continue long. The merchants presented a protest to the pooling lines, calling upon them to protect the commercial interests of Chicago against such ruinous discriminations. Perhaps, however, this was unnecessary, for there were strong motives of self-interest which impelled the railroad companies to adopt the meas-

ures recommended by the merchants. The pool-lines lowered their rates and the discrimination against Chicago ended. The circumstances which governed in this case are apparent. The interests of all the railroads centering in Chicago from the Southwest and Northwest are closely identified with the commercial interests of that city. To it they haul loaded cars and there they receive the largest amount of return freights. The whole economy of transport naturally leads them to favor through traffic to and from Chicago, rather than to allow freights to be diverted to lateral lines. All the great trunk lines which, with their connecting lines, operate between Chicago and the East, namely, the Grand Trunk, the New York Central, the Erie, the Pennsylvania, and the Baltimore and Ohio Railroads, depend very largely upon the enormous Chicago markets for their east-bound freights, and they are able to secure a larger amount of traffic to that city than to other any western point. Freights can be transported in large quantities a distance of nearly a thousand miles without breaking bulk much more economically than if received from numerous branch lines at various intermediate points. The economies of transport therefore closely ally the interests of the railroads mentioned to the commercial interests of Chicago.

Facts of this nature tend to show how strongly the interests of the roads lead them to frame their freight-tariffs in such a manner as to favor the interests of great commercial cities. They also show that the equilibrium of competitive forces is an exceedingly delicate one, and that a small difference in rates may produce very important commercial results.

(*f*) The following illustration of the competition of rival markets is presented by Mr. J. D. Hayes, of Detroit, in a statement to this Department:

> The class of freights termed "special" grew out of some cargoes of coffee being landed at Baltimore for Saint Louis, together with some other circumstances which the northern roads could not control. Sugar, molasses, crockery, and coffee entering into the daily use of every household, they became what merchants term "close articles," the freight forming a large percentage of cost, and they too were placed in the class termed "special." These commodities being largely of southern production could be taken via New Orleans to Saint Louis at very low rates, and unless something was done to aid the Chicago merchants to compete with their Saint Louis rivals, they and the northern roads would get no share of that class of business. Therefore, the "special" class became a mutual thing for the protection of traffic over the northern roads and for the northern merchants.

The same commodities, however, when shipped from Chicago and Saint Louis to interior points, are placed in a higher class and the freight-charges are based upon local rates, and in some cases, as stated by Mr. Hayes, the charge for 100 miles "local" is greater than for 1,000 miles on the through trunk lines. This case illustrates the influence of several distinct classes of competitive forces: *First*, the competition between vessels on the ocean, when employed in bringing the various commodities embraced in this "special class" from the countries in which they are produced to the port of New Orleans and to the several Atlantic seaports; *second*, the competition between the market of New Orleans, Balti-

more, Philadelphia, New York, and Boston for the importation and distribution of the commodities composing this class of freights; *third*, the competition between the various trunk lines connecting the West and the Atlantic seaboard; *fourth*, the competition between the Mississippi River boats and the roads from the Gulf ports to the Western and Northwestern States; *fifth*, the competition of the east and west lines with the north and south lines mentioned; *sixth*, the competition between the markets of Chicago and Saint Louis and the competition of all the important trade-centers of the West for the same trade; *seventh*, the competition between rail-lines from Chicago and Saint Louis and the other centers of trade to the points of final destination.

Evidently the great trunk lines, with all their powers of capital and organization, are as much constrained as to their rates upon this class of freights, by the all-pervading influence of competition, as are the ships, which are free to engage in any traffic and to follow any course upon the trackless ocean. In so far as relates to this particular traffic, and in fact to all traffic other than that which is strictly local, the railroad, by virtue of the physical fact that it is confined to one route, is even more circumscribed in its competitive influence than is the ship upon the ocean.

(*g*) The subject under consideration was illustrated by recent events in connection with competition between the trunk lines from Chicago and Saint Louis to the Atlantic seaboard. The facts in this case were furnished by Mr. George H. Morgan, secretary of the Merchants' Exchange of Saint Louis.

The various lines east from Saint Louis formed in April, 1876, a combination to maintain rates by means of the arrangement known as "pooling." It happened, however, that during the existence of this combination a war of rates prevailed between Chicago and the East, by means of which rates from Chicago were reduced below the actual cost of transportation. The effect of the maintenance of the Saint Louis rates was simply to divert competitive business from Saint Louis to Chicago, including both receipts from the West and shipments to the East. In regard to this subject Mr. Morgan says:

> If the freight on flour, wheat, corn, tobacco, lard, and pork to eastern markets during the first six months of the year 1876 had been based upon the same rate per mile as prevailed from Chicago the saving to Saint Louis would have amounted to about $360,000 on the freight alone, and such reduction would have greatly stimulated trade at Saint Louis instead of depressing it by rates discriminating against its commercial interests.

In a subsequent letter, dated May 29, 1876, Mr. Morgan says:

> The burden imposed upon the commerce of Saint Louis became so oppressive under the pool that our merchants could no longer submit to it. About two weeks ago, therefore, a committee was appointed from the Merchants' Exchange to wait upon the executive committee of the pool and demand that Saint Louis be put upon an equal footing as regards eastern freights with other competing cities. The demand was acceded to, and we have now a tariff based on the tariff at other points. The rate from Chicago to New York is 20 cents; consequently the rate from Saint Louis to New York

is 23.20, being 16 per cent. more according to distance. Thus the great principle we have been contending for has been established, and our railroad men promise to keep Saint Louis on a fair basis hereafter.

The most prominent competitive forces in this case were, first, the two rival commercial cities, and, second, the rival roads. The interests of the roads are evidently very closely identified with those of their terminal cities. In the case of the Saint Louis roads, all that was required was an understanding of the mutual interests of the city and of the roads in order to conform rates to those from Chicago.

It is a matter of interest to observe a feature of this case which characterizes commercial movements quite generally, and that is, that an arrangement made for the purpose of regulating any particular line of competitive traffic, incidentally affects important collateral interests. The commerce which is competitive as between Saint Louis and Chicago is chiefly embraced within the territory lying north of the latitude of Saint Louis and south of the latitude of Chicago. But the railroads from St. Louis to the East in reducing their rates so as to make them conform to the Chicago rates were obliged to embrace the traffic coming to them from roads extending from Saint Louis to Kansas, Arkansas, the Indian Territory, and Texas, and not competitive with respect to the Chicago roads. The single fact of the reduction of the rates east of Saint Louis was therefore probably felt by railroads extending from interior points in Texas to the port of Galveston, and also by vessel-owners engaged in the transportation of the products of Texas from Galveston to the North Atlantic States and to foreign countries, as a reduction of rates on the overland or all-rail route from the interior of Texas by the way of Saint Louis would naturally tend to increase the movement of cotton by that route, and to diminish the movement by the way of Galveston, or to compel a reduction of the rates by the latter route.

(*h*) The following extract from a statement made to this Department by Mr. Charles Randolph, secretary of the Chicago Board of Trade, points to the fact that the elements of competition are constantly increasing, and that in the course of the development of the railroad system it is becoming more and more difficult to form combinations between competing trunk lines for the arbitrary determination of rates:

I think the multiplication of avenues for transit, and especially the lack of dividends to stockholders, and also the extremely low rates for the past two years prevailing for water-transit, is certainly weakening the power to combine. The completion of the Baltimore and Ohio line to this city seems to have demonstrated that the introduction of a new competitor brings to the question more of complication and more of a disposition to act independently. Although it appears to be a somewhat uncomfortable rival, late developments indicate that it is by no means averse to co-operation in agreed rates. Its recent arrangement with the Erie Railway, forming a line to New York, entirely independent of either the New York Central or Pennsylvania Central, gives it great additional power for peace of war. Other lines mainly through Canada are nearing an independent through connection, and with increased and more varied interests it would seem that combinations are much less liable to be made effectual or lasting.

(*j*) The exceedingly wide range of the competition between rival transportation-routes for traffic between important trade-centers is very strikingly illustrated by facts which have been presented by Mr. Albert Fink in reply to inquiries from this office concerning the routes which actually compete for traffic between the cities of Saint Louis and Atlanta, Ga. Saint Louis is an important market for such western products as are shipped very largely into the Southern States, and Atlanta is one of the most important distributing centers of these products throughout the South Atlantic and Gulf States. The various routes competing for this traffic are shown in the following schedule:

Distances from Saint Louis to Atlanta, Ga., by various routes.

		Miles.
(*a*)	Saint Louis to Baltimore	920
	Baltimore to Richmond by York River	203
	Richmond to Atlanta	547
	Total	1,670
(*b*)	Saint Louis to Baltimore	920
	Baltimore to Richmond by James River	258
	Richmond to Atlanta	547
	Total	1,725
(*c*)	Saint Louis to Baltimore	920
	Baltimore to Norfolk by steamer	165
	Norfolk to Atlanta *via* Lynchburgh and Chattanooga	650
	Total	1,735
(*d*)	Saint Louis to Baltimore	920
	Baltimore to Norfolk by steamer	165
	Norfolk to Atlanta by Wilmington and Augusta	705
	Total	1,790
(*e*)	Saint Louis to Baltimore	920
	Baltimore to Wilmington by steamer	450
	Wilmington to Atlanta by Charlotte	452
	Total	1,822
(*f*)	Saint Louis to Baltimore	920
	Baltimore to Charleston by steamer	557
	Charleston to Atlanta by Augusta	310
	Total	1,787
(*g*)	Saint Louis to Baltimore	920
	Baltimore to Savannah by steamer	640
	Savannah to Atlanta	295
	Total	1,855

(*h*)	Saint Louis to Cincinnati	340
	Cincinnati to Huntington *via* Ohio River	160
	Huntington to Charlottesville	324
	Charlottesville to Atlanta *via* Danville and Charlotte	532
	Total	1,356
(*j*)	Saint Louis to Louisville	320
	Louisville to Nashville	185
	Nashville to Chattanooga	151
	Chattanooga to Atlanta	137
	Total	793
(*k*)	Saint Louis to Evansville	161
	Evansville to Nashville	152
	Nashville to Chattanooga	151
	Chattanooga to Atlanta	137
	Total	601
(*l*)	Saint Louis to Cairo	147
	Cairo to Nashville *via* McKenzie	101
	Nashville to Chattanooga	151
	Chattanooga to Atlanta	137
	Total	536
(*m*)	Saint Louis to Cairo	147
	Cairo to Memphis	169
	Memphis to Atlanta	447
	Total	763
(*n*)	Saint Louis to Cairo	147
	Cairo to Meridian	356
	Meridian to Atlanta	567
	Total	1,070
(*o*)	Saint Louis to Cairo	147
	Cairo to Grand Junction	154
	Grand Junction to Chattanooga	258
	Chattanooga to Atlanta	137
	Total	696
(*p*)	Saint Louis to Columbus	156
	Columbus to Atlanta	370
	Total	526
(*q*)	Saint Louis to Columbus by river	220
	Columbus to Atlanta	370
	Total	590

(r)	Saint Louis to Memphis by river	442
	Memphis to Atlanta	447
	Total	889
(s)	Saint Louis to Vicksburgh by river	832
	Vicksburgh to Atlanta	473
	Total	1,305
(t)	Saint Louis to New Orleans by river	1,240
	New Orleans *via* Mobile and Montgomery to Atlanta	496
	Total	1,736
(u)	Saint Louis to New Orleans by river	1,240
	New Orleans to Mobile by steamer	174
	Mobile to Atlanta	180
	Total	1,594

The various routes described in the foregoing schedule are delineated on map No. 12, at the end of this report.

In this case we see *twenty lines competing for the traffic between two centers of trade, although those lines differ in length from* 526 *miles to* 1,855 *miles.* In order that each one of these lines may participate in the traffic, it is necessary that they should all carry it at very nearly the same rates. In practice it is found that the longer lines, in order to secure a share of the traffic, are often compelled to reduce their rates below those charged on the shorter lines. In this way it often occurs that *the longer lines actually determine the rates.* As already shown in another part of this report, the longer line may in many cases be able to carry the traffic at lower rates than the shorter line, in consequence of a preponderance of freights in one direction, magnitude of total traffic, or other considerations of an economic bearing. It appears that, with respect to this particular traffic, boats on the Mississippi River compete with the Baltimore and Ohio Railroad and with ocean-steamers plying between the city of Baltimore and the South Atlantic seaports. While all these lines have a common interest with respect to the traffic between Saint Louis and Atlanta, each one of them has traffic-interests which are not common to all or perhaps to any two of them, and these other interests may be of very much more importance to particular lines than the competitive traffic referred to. Evidently it is impracticable for all these twenty lines to enter into a close combination as to the rates which shall prevail between Saint Louis and Atlanta or to maintain any such agreement if entered into.

The trade between Saint Louis and Atlanta is also greatly affected by the competition of several rival markets, viz: Saint Louis, Chicago, Peoria, Louisville, Cincinnati, Baltimore, and New Orleans. Very little, f any, grain reaches Atlanta by the way of Baltimore or by the way of

New Orleans, by direct consignment. Grain which reaches Atlanta by the way of Baltimore is first shipped to the Baltimore market, thence to southern ports by vessels in the coastwise trade, and thence by rail to points of destination. Grain shipped to Atlanta via New Orleans is generally shipped to the New Orleans market, and thence to Atlanta in the ordinary course of traffic on transportation-lines from New Orleans to that city. The forces which control the traffic between Saint Louis and Atlanta are the competition between many transportation-lines and the competition between many centers of trade.

This illustration in regard to the competition for traffic between Saint Louis and Atlanta is by no means an exceptional one. Many similar illustrations might be presented as to traffic between points at the West and points on the Atlantic seaboard, but the one presented will suffice.

The facts in this case indicate the exceedingly complicated nature of the question as to the determination of freight-charges; a question which must be decided in each case upon the experience and judgment of those whose duty it is to make and to adjust freight-tariffs, and who must of necessity be well informed as to the force, in practice, of each one of the conditions hereinbefore mentioned.

(*k*) A very clear illustration of the extent of competition between common points is presented in map No. 13, showing the transportation-lines between the South Atlantic and Gulf States and the cities of Boston, New York, Philadelphia, and Baltimore. The rates by these lines are so nearly equal that oftentimes the difference of one cent per 100 pounds will determine the route and the market to which cotton is sent from any particular point.

(*l*) Very interesting illustrations of competing lines and competing markets are also presented in maps Nos. 8, 9, 10, and 11, at the end of this report. Especial attention is called to the description of these lines in a statement by Mr. Albert Fink. (Appendix, pages 1 to 48, inclusive.) Mr. Fink, having been engaged for several years as superintendent of the Louisville, Nashville and Great Southern Railroad, and for about a year as general commissioner of the Southern Railroad and Steamship Association, became quite familiar with the competitive struggles of all these lines.

From the foregoing statements as to the circumstances which determine the course and condition of commerce, it is evident that no general combination between the competitive forces of transport and of trade for the regulation of rates between different sections of the country is possible. In the course of the development of the railroad system, many of the fears at first apprehended as to the results of railroad combinations and consolidations have been dispelled. In new and unforeseen ways competition has, in regard to certain very important branches of traffic, become the governing influence.

The new phases under which the internal commerce of the country

presents itself, at the present time, are but the outworkings of competitive forces which have been developed by the extension and consolidation of railroads. This is a result which was not anticipated by the projectors of the great trunk lines. Several railroad companies have expended millions of dollars and constructed thousands of miles of railroads in order to gain control over the commerce of this country. But their efforts have been unsuccessful, for the circumstances which surround the railroads of the country are generally stronger than the power which they can bring to bear, either alone or in combination with other lines. Many illustrations upon this point might be adduced. Perhaps this fact has been more fully realized, in practice, by the Pennsylvania Railroad Company than by any other railroad company, it having secured the control of a greater mileage of lines than any other company in the world. The investigating committee of 1874 have expressed this view as follows:

Experience in the West has demonstrated that a railway cannot determine the route or destination of traffic originating on its line, and certainly has no controlling influence over trade at competitive points. Elements independent of the way of carriage first determine the destination of freight. After that, questions as to speed, safety, rates, &c., fix the route. With so many competitive points in the West the railway companies recognize their true interests in furnishing every facility to the shipper of freight, and do not attempt *by possible hinderances or unwise charges to defeat his interests, resulting as it would to the injury of the railway companies.*

There is reason to believe that the managers of certain of the great railroad organizations of the country, in attempting to carry out their ambitious policy of railroad extension, failed to foresee the fact that they were creating competitive agencies more rapidly than they were gaining control over commerce.

PRACTICAL DIFFICULTIES IN THE ADJUSTMENT OF COMPETITIVE RATES.

Ten years ago the trunk lines connecting the Western States with the Atlantic seaboard exercised very much more influence in the determination of freight-rates than they do to-day, and for the reason that railway extensions and railway combinations of various sorts, in connection with the competition of markets, have introduced an almost innumerable number of conflicting and ever-varying conditions. The great trunk lines are to-day unable to secure such rates for their competitive traffic as they deem to be remunerative. Competition has run wild. A few years ago the freight-agents of the trunk lines were accustomed to meet together and adjust through rates very much to suit their own ideas, but the difficulties of making such compacts have increased year by year, and when entered into it has been found more and more difficult to carry out their provisions.

The spirit of rivalry between the managers of the various lines is the most apparent obstacle to the adjustment of competitive rates, but behind this lie all the difficulties of an economic and commercial nature

of the conscience and interests of the public; and through the representatives of the people, in legislatures and in Congress, hostile action would be induced, which would more than counterbalance the advantages which would flow from the increased rates which would be commanded through so powerful an organization." The late president of the New York Central Railroad is said to have expressed the opinion "that there was much force in this view."

The Saratoga compact was signed by the officers of a large number of railroads in the Western States, and two boards of commissioners were appointed, one at the East and another at the West, charged with the duty of determining rates in each direction.

But the two boards were impotent from the very beginning. No edict of theirs was ever regarded as of the least authority, and in the course of a few weeks the compact quietly passed out of existence. Since that time the great trunk lines have been in a state of almost constant warfare in regard to competitive traffic.

For nearly eight months of the year 1876 the fiercest, the most determined, and perhaps the most wasteful contest ever known in the history of railroad management was waged between the trunk lines connecting the West with the seaboard. This contest resulted from a demand made by the president of the New York Central Railroad about the 1st of May that equal rates should be maintained between the chief commercial centers of trade at the West and the several Atlantic sea-ports. The managers of the New York Central Railroad maintained that this was the only practicable basis upon which the commercial interests of New York City and of the transportation-interests of the lines centering at New York could be protected. It was held that the greater distance to New York than to Baltimore was counterbalanced on the New York Central Railroad by easier grades, superior facilities of roadway and equipment, and the cheapness of transportation in consequence of an enormous traffic, both through and local.

The managers of the Baltimore and Ohio Railroad maintained, on the other hand, that the assumed disadvantages of their line, in consequence of being obliged to overcome the heavy grades of the Alleghany Mountains, were counterbalanced by the advantages of a shorter line and cheaper fuel. The position taken by the management of the New York Central Railroad in this matter was perhaps a rough mode of striking a general average as a settlement of many perplexing difficulties which had vexed the adjustment of through rates for more than ten years.

The equality of the Atlantic seaboard centers, with respect to the vast and varied commerce of the United States, is perhaps as much of a problem as is "the railroad problem" itself. A rule establishing equality among the four principal Atlantic sea-ports with respect to a point in Ohio might work great inequality with respect to a point in Michigan or to a point in Missouri. A rule establishing equality with respect to wheat might work great inequality with respect to

corn, and the rule of equality in regard to neither corn nor wheat might apply to cotton, to provisions, to tobacco, to live animals, or to any other of the staple products of the West. A rule allowing equal rates of profits to each one of the trunk lines would cause each one to charge a different rate based upon the actual cost of transportation per ton per mile. This would tend to throw all or nearly all the competitive traffic upon the road which could carry freights at lower rates than any one of the others, and in the course of time that road might be able to break down competing lines and to become practically a monopoly.

Equality of rates, in so far as relates to the interests of the roads, might work very great and damaging inequality in regard to the interests of the various seaboard cities, and, on the other hand, a rule establishing equality of rates with respect to the interests of the cities might have the effect of bankrupting certain of the roads and of building up the traffic of other roads, and thus the principle of equality might in the end seriously injure the commerce of certain cities in so far as they are dependent upon trade between the West and the seaboard. Boston has western trade for which Baltimore cannot compete and Baltimore has western trade for which Boston cannot compete, and between the limits of the commercial activities of these two cities there is a broad field for competition, every point within which presents different commercial bearings with respect to the different centers of trade. Perhaps a general, although somewhat indefinite, expression of the rights of the several Atlantic sea-ports with respect to trade might be formulated thus: *Equality where conditions are equal, and preference where special advantages exist.*

Each city has certain advantages over all other cities with respect to trade, and each railroad has certain advantages over all other railroads with respect to transportation. The enforcement of any rule of equal rates, from all points within an extensive section of the country to the seaboard, on all classes of traffic, without regard to destination, would be in the face of established commercial principles.

It is impossible to lay down any general rule for securing the ends of equal and exact justice with respect to the operations of each trunk line, and the interests of each one of the Atlantic sea-ports, since the circumstances surrounding each road and each city differ so widely. The subject presents a very broad field for inquiry and discussion, and emphasizes the importance of establishing commissions or other agencies through which each State and each city may enter upon the study of its commercial interests.

Remedies of various kinds have been proposed for the purpose of meeting difficulties in particular cases. The following plan of action is suggested by the board of railroad commissioners of Massachusetts:

> The business community of Boston should combine to offset the combination of the railroads. They should deal with that line which offers them equality, and thus compel others to do the same. Should they take this course, throwing their business unitedly through the action of their boards of trade and exchanges in favor of one line

as against another, recent experience shows clearly enough that the desired result would soon be accomplished. In this respect the legislature can do little; *the business community, if it really chooses to organize and help itself, can do much.**

This is a legitimate mode of protecting the commercial interests of a city, sound in ethics and proper where practicable. Whether it be the wisest and most practicable line of action or not, it is certain that the merchants of Boston can do much by the power of associated effort, and very much by the force of capital and individual enterprise and by a proper use of all the means placed within their power, and the history of that city leaves no ground to apprehend any failure in this regard.

The measures which should be adopted for protecting and promoting the commercial interests of each one of the Atlantic sea-ports must be determined mainly by its merchants. At this time, when the equipoise of commercial movements is so delicate, it behooves those whose interests are allied to the commercial interests of each city to realize the fact that vigilance is alike the price of safety and of success.

Since the failure in practice of the efforts which have been put forth by the railroad companies to maintain rates, freight charges have gradually fallen, and cheap transportation has been attained through the unrestrained action of competitive forces.

The fact of the general reduction of freight-charges on the great trunk railroads during the last ten years, and the practical attainment of what even four years ago would have been regarded as meeting the demands for cheap transportation, has not settled all the difficulties connected with our railroad system. The railroad companies exercise a certain range of discretionary power within the limitations already referred to, and it is possible for them so to adjust both "through" and "local" rates as to depress the interests of one city and to advance the interests of another.

Discriminations may also be made against the interests of States and of the whole country. The influence of discriminations may be appreciated from the fact that oftentimes a difference of one or two cents per hundred pounds turns traffic in one direction or another. Discriminations as they apply to cities and States call for special investigations and for special remedies.

In the struggle for a high place or for supremacy, each commercial city stands alone from the very exigencies of its geographical position, its transportation-lines, and its general interests. Every avenue of transport upon the land and upon the sea is its servant and the field of its commercial activities is the world. It has been aptly said that "commerce has no cousins, and that it always moves toward profits. Evidently no two cities can be very closely allied in their commercial interests. Those interests may in many cases be correlative but they

* Report of Massachusetts Railroad Commissioners for 1876, page 70.

can never be in the nature of a partnership, for to a certain extent each commercial city is the rival of every other commercial city; but this rivalry is the soul of enterprise, and it is compatible with the fullest, the freest, and the most generous competition.

Many of the difficulties which environ the railroad problem, in so far as relates to the conflicts between the rival trunk lines, are due to the fact that the managers of those lines have not adopted measures for arriving at a common understanding as to the cost of transportation under the different conditions hereinbefore alluded to, the circumstances which mark distinctions between "local" and "through" traffic, the competitive character of different commodities and classes of commodities, the sources and destination of traffic, and the relations which in the nature of things exist between railroads and the commercial cities whose interests they chiefly subserve.

Railroad managers have, for the purpose of marking the distinctions between different classes of traffic and rates, adopted certain terms, such as "local traffic," "through traffic," "arbitrary rates," "joint rates," "competitive rates," "non-competitive rates," &c. But in practice wide differences of opinion exist as to the application of these terms. Traffic which one railroad might consider "local," and therefore be inclined to give to it an "arbitrary rate," may be considered by another road to be "competitive traffic," and a demand be made for a "joint rate," or that the rate on the former road shall be in some respects conformed to the rate charged by the latter.

It will never be practicable for the railroads to reach an adjustment of all points touching their conflicting interests, and the interests of rival markets, with the precision of a mathematical demonstration, but it is believed that very many differences which produce disastrous results to the railroads without benefiting the public might be determined upon general principles as clearly as are the conflicting interests of individuals in their social and commercial relations, through distinctions intrenched in the fundamental principles of law and administered by the courts of justice. The railroad companies possess the means of supplying much of the information necessary to the attainment of this end, and it is a matter of the highest importance that they should collect the data requisite for a proper elucidation of the whole subject of the economy of transport by rail. Interest and duty here seem to point in the same direction.

An attempt has thus been made to elucidate and to emphasize the fact that the discretionary power exercised by the managers of railroads with respect to freight-tariffs is confined within certain limits imposed by forces of transportation and of trade beyond their control; that these restraints upon freight-charges apply especially to "through" or "competitive" traffic, and that railroad companies are also to a certain extent limited as to their "local" or "non-competitive" traffic by the same causes, acting, however, more remotely and less effectively.

It has also been shown that these restraining and regulating forces operate in widely varying degrees; in certain cases compelling companies to carry freights at an absolute loss, or at very low rates, and in other cases exerting an influence so feeble and uncertain as practically to allow the companies an almost unlimited discretionary power in the establishment of both through and local freight tariffs. These varying conditions present to each commercial city and to each railroad company a separate "railroad problem," the elements of which are specific wants and specific experiences. The determination of the conditions surrounding each city and each transportation-line is a work especially devolving upon those whom interest and duty alike impel to the task. The subject is vast in its extent, and it runs into the consideration of conflicting interests which cannot possibly be treated of in this report.

COMMERCIAL TRAVELERS.

A statement in regard to the competitive forces affecting commercial movements between different sections of the country would be incomplete without noticing the results of *the system of employing commercial travelers*. This comparatively new agency of commerce has not only introduced important changes into the etiquette of trade, but it has been the means of developing new commercial movements and of greatly extending the limits of the commerce of the various cities. Twenty years ago the commercial traveler was regarded as a sort of privateer upon trade, and this repute undoubtedly caused his operations to be lacking in some of the essential characteristics of legitimate business transactions. But as the avocation has increased in importance it has advanced in dignity, and an almost opprobrious appellation at first applied to those engaging in it, has been exchanged for one more befitting the occupation. This new agency of commerce is now seen to be a natural outgrowth of the facilities afforded by railroads and telegraphs.

The soliciting of orders and selling by sample in the hands of the agents of business houses has become an established method of intercourse between buyer and seller. The old habits of trade have been abandoned and the commercial traveler has of necessity become more closely identified with the interest of the business which he represents. From the force of competition between those of his own vocation he has been obliged to acquire a knowledge of the state of markets in all parts of the country and of other conditions vital to the interests of trade. Almost every conceivable article of merchandise is now sold through this agency, and purchases of raw material are extensively made in the same manner. The economies of this mode of commercial intercourse are obvious. Buyer and seller are thus brought closer together, losses through bad credits are reduced, trade is extended, competition is rendered more active, collections are more promptly made, interest on capital is saved, and the expenses of the great body of retail dealers are reduced.

Every sale made by the commercial traveler tends to promote the prosperity of the city in which his business house is located, and to extend the commercial influence of that city. This creates competition with other commercial cities, and forces transportation-lines to provide the requisite facilities to meet the new demands of trade. At the present time there are very few manufacturing or commercial houses in this country which do not employ one or more commercial travelers, and it is an indisputable fact that the energy, tact, and persistency of these men have much to do in determining the direction of the commercial movements of the day.

Besides, all the railroad companies and freight-lines have in their employ agents at almost every important commercial point, who are actively engaged in soliciting freights. This, also, tends to multiply and to complicate the elements of competition.*

6.—THE COMPETITIVE FORCES WHICH EXERT A CONTROLLING INFLUENCE OVER THE COMMERCE BETWEEN THE WEST AND THE SEABOARD WITH RESPECT TO THE COMMERCIAL INTERESTS OF BOSTON, NEW YORK, PHILADELPHIA, AND BALTIMORE.

The conditions under which competition exerts a restraining influence over freight-charges may be more clearly understood by considering the forces which exert a controlling influence over commerce between the West and the seaboard.

Soon after the year 1850 the railroads extending toward the West from the several Atlantic sea-ports began to compete with the Erie Canal for the immense and rapidly-increasing commerce of the West. At first the through traffic of the roads was confined to the carriage of provisions, live animals, and general merchandise, but by the year 1873 the railroads had become in the fullest sense highways of commerce for nearly all classes of commodities, even in direct competition with the lakes and the Erie Canal. Coal, iron-ore, and other minerals, chiefly the products of the mines of Pennsylvania, are transported to the West almost exclusively by lake, as return cargoes for vessels engaged in the transportation of grain eastward. These heavy mineral products are generally transported on water-lines wherever such facilities exist.

The transportation of grain is now the most important branch of the through traffic from the West to the East, grain and flour constituting about 50 per cent. of the entire eastward movement of through freights.

The relative importance of the railroads and of the Erie Canal as highways of commerce for the transportation of grain may be inferred from the following statement showing the receipts of grain at Portland,

* Two or three expressions in the foregoing remarks in regard to commercial travelers have been adopted from an interesting article upon the same subject which recently appeared in the New Orleans Times.

Boston, New York, Philadelphia, and Baltimore during the year ending December 31, 1876:

	Bushels.
Received at New York by canal	32,853,839
Received at New York by rail	59,047,953
Received at Portland by rail	3,999,181
Received at Boston by rail	22,753,698
Received at Philadelphia by rail	35,546,845
Received at Baltimore by rail	37,564,536
Total by rail	158,912,213

N. B.—There appears to have been about four million bushels of grain received in New Yok, coastwise, which does not appear in the above table.

It appears that only 17 per cent. of the grain shipped from the West reached the seaboard by the Erie Canal and that 83 per cent. by the competing railroads, or about five times as much by rail as by canal.

It is proposed to consider briefly and in a somewhat general manner the more important features of this diversion of commerce from the Erie Canal, or more properly speaking the development of commerce on railroads, and the questions which have arisen with respect to the interests of the rival trunk roads and the rival seaboard cities. In this connection attention is called to the various lines of transport connecting the West with the seaboard, as delineated on maps 1 to 7, inclusive, at the end of this report. These lines are the Lake and Canadian Canal route to Montreal, the Lake and Erie Canal line to New York City, the Grand Trunk Railway, the New York Central Railroad, the Erie Railway, the Pennsylvania Railroad, and the Baltimore and Ohio Railroad.

In considering the competition between the east and west trunk lines it is necessary to observe, first, *the distinction between local or non-competitive traffic and through or competitive traffic.* The expression "through traffic" is here applied to traffic between the Western States and the Atlantic seaboard. Statistics showing the relative proportion of local and through traffic can only be obtained in regard to the Erie Canal and the Pennsylvania Railroad. The New York Central and the Erie Railroads present only statistics in regard to their total tonnage movement, and the Baltimore and Ohio Railroad Company merely presents facts as to through tonnage and the quantities of grain and flour and of coal and live stock transported.

The local traffic on almost all railroads greatly exceeds in importance the, "through traffic" which we are here especially considering. During the year 1875 the through tonnage of the Pennsylvania Railroad amounted to 1,354,203 tons and the local tonnage amounted to 7,761,165 tons, the through tonnage being only 15 per cent. of the total tonnage.

The number of through and local *tons carried one mile* were—

Through tons carried one mile	484,043,840
Local tons carried one mile	995,370,626
Total	1,479,414,466

It appears from this that the ton-mileage of through freight was 33 per cent. of the total ton-mileage. The through tonnage of the Erie Canal during the year 1875 appears to have been about 50 per cent. of the total tonnage carried. From the very scanty data of this sort which can be procured as to local and through freight tonnage it is estimated that the through traffic passing over all the main lines connecting the West with the East is about 33 per cent. of the total traffic over the several lines. The proportion of "local" and "through" traffic differs very much on the various lines.

Attention is especially called to *the fact that the local traffic is but little affected by the competition between rival trunk lines or by the competition between rival seaboard cities, whereas the through traffic is greatly exposed to such competition.*

VARIOUS DEGREES OF COMPETITION IN THE COMMERCE BETWEEN THE WEST AND THE SEABOARD.

The through traffic between the West and the seaboard is competitive in various degrees, both with respect to the interests of the rival trunk lines and to the interests of the rival commercial cities on the Atlantic seaboard. There are many points to and from which the facilities of transport afforded by one route for certain freights are so much superior to the facilities afforded by every other practicable route that in practice the more favorably situated line enjoys a monopoly of the traffic; and there are also many points to and from which there are several lines of transport, all affording such facilities for certain traffic, as to engage with each other in a constant and effective competition.

The field of competition in the great struggle for the traffic between the Western States and the seaboard begins in the State of Ohio and grows stronger and more complicated as we advance toward the west. At Cincinnati, Louisville, Indianapolis, Saint Louis, Chicago, Peoria, and all other important centers of trade, the shipper has not only the option of transport to each one of the Atlantic sea-ports, but he has also the choice of two or more routes to the same port, all offering equal rates in time of agreement, but during the frequently recurring and long enduring railroad wars the agents of each line bidding against all the others and struggling for all traffic which is in any practical sense competitive. The various degrees of competition range from the remote and incidental competition, the existence of which may sometimes be regarded as problematical, to that direct struggle between rivals for the same traffic. This may be illustrated with respect to traffic over the east and west trunk lines as follows:

First. The direct shipment of merchandise from interior points at the West to Europe and the direct shipment of merchandise from Europe to interior points at the West constitute traffic which is in the highest sense competitive, since the rail-lines from such interior points connect directly with ocean-steamer lines to Europe at Boston, New

York, Philadelphia, and Baltimore. During the last two or three years very little difference has existed between the prevailing rates from interior points in this country to points in Europe.

Second. The shipment of commodities from points in the West to Atlantic sea-ports for local consumption, for distribution coastwise or to interior points in the United States, or for exportation to foreign countries, constitutes a traffic which is competitive, but not to as great an extent as *direct shipments* from interior points at the West to points in Europe. In the case of shipments to the sea-port markets, other considerations are involved besides the mere question of transportation. These considerations are the advantages afforded by the several markets, the relative magnitude of the home and foreign demand, and the facilities for storage and for interior, coastwise, or foreign shipments at each port.

Third. But there is a third and the largest class of traffic which is even less affected by the competition of rival lines and of rival sea-ports, viz, direct shipments from the West *for consumption at interior points in the Atlantic States.* Such shipments are in many cases confined to one of the trunk lines and therefore form a part of its local traffic. In other cases two or even three of the lines may compete for the traffic, but it is excluded from the direct competition of *all the trunk lines* by certain geographical limitations.

But even where the traffic appears to be confined to one or two lines, the rates of transportation are to some extent controlled through the competition of product with product in the various markets of the country, and thus each one of the transportation-lines exerts a *competitive influence* over the rates on other roads.

It is important to notice in this connection the fact that the home consumption in the Atlantic States very largely exceeds the foreign demand. Of the entire surplus products of the West, embracing vegetable food, animals and their products, spirituous and malt liquors, and the innumerable commodities transported in greater or less quantities, very much the larger part is shipped to sea-ports or to interior points on the several trunk lines for local consumption. It was found by careful computation that in the year 1872 about 40 *per cent.* of all the grain shipped into the Atlantic States was exported and about 60 *per cent.* was consumed in the United States. During the year 1876 also, the demand for such products in the States of the Atlantic seaboard largely exceeded the foreign demand.

In view of the facts thus presented it is evidently necessary in considering the subject of transportation between the West and the seaboard to distinguish carefully between these three degrees of competition with respect to through traffic, viz:

First. Direct shipments from interior points at the West to Europe;

Second. Shipments from the West to Atlantic sea-ports; and

Third. Direct shipments from the West to interior points in the States on the Atlantic seaboard.

The importance of these distinctions has recently been realized in the course of the difficulties which have been encountered by the managers of the trunk lines connecting the West and the seaboard in their attempts to adjust through rates between the centers of trade at the West and Boston, New York, Philadelphia, and Baltimore. About the 1st of February, 1877, the representatives of the various trunk lines met at New York to form a basis of agreement. There was no difficulty in agreeing as to the rates by the various lines for all traffic consigned from the West directly to ports in Europe, but in regard to rates on commodities shipped to the sea-ports above mentioned the trunk lines were unable to agree, since such commodities may be consumed at those ports, and therefore constitute a local traffic, or be exported to foreign countries or to seaports in the United States, and thus become competitive traffic. The final adjustment of differences in this case is believed to have been effected through the spirit of compromise. The real difficulty in the case was to distinguish between "local" and "competitive" traffic.

This subject involves many perplexing questions in practice, for example, the drawing of a line of distinction between competitive and noncompetitive business; the determination of the geographical extent of the influence of trunk lines by means of their various branches and connections; questions as to the relative advantages which the rival lines enjoy on account of distance, grades, and other elements of the cost of transportation; the facilities for coastwise and foreign distribution, &c.

Experience seems to prove that there must be either a tacit or a formal agreement as to rates on all competitive traffic, the rates by tacit agreement constituting substantially the market value of transportation, whereas the formal agreement is an arbitrary or artificial mode of adjustment.

CERTAIN IMPORTANT CONDITIONS UNDER WHICH THE TRUNK LINES ENGAGE IN TRAFFIC BETWEEN THE WEST AND THE SEABOARD.

The several trunk lines engage in traffic between the West and the Atlantic seaboard under certain very important conditions which may be stated as follows: The more northerly lines to the seaboard enjoy peculiar advantages *on account of their geographical position.* Grain raised in the States of Iowa, Minnesota, and Wisconsin, which has the option of transport to the seaboard by the lakes and the New York or Canadian canals, as well as by the more northerly roads, can, under ordinary circumstances, be shipped to Europe via Montreal, Boston, or New York at less cost than by the way of Philadelphia or Baltimore. On the other hand, grain raised in the southern part of Illinois or Indiana and exported to Europe can, on account of shorter rail distance and direct connecting ocean-lines, be transported over the Pennsylvania Railroad and over the Baltimore and Ohio Railroad, via Baltimore and Philadelphia, cheaper than by the way of the more northerly roads. These conditions

are, however, quite variable in practice. In case the Baltimore and the Philadelphia markets are glutted or no available tonnage can be secured at these ports for foreign shipment, commodities raised on the line of the Baltimore and Ohio or the Pennsylvania Railroad will inevitably take a longer and more expensive route if such movement should be justified by more favorable conditions of trade or of transport at other sea-ports.

This is but a general view of the question. It runs into almost endless detail and presents many striking exceptions. There are throughout the Western States many small interior points situated upon a road forming a direct communication with one of the trunk lines to the seaboard only. Assume a point thus situated on one of the connecting lines of the New York Central Railroad, from which direct transportation can be secured without change of cars to the city of New York, but involving a change of cars if sent to the seaboard over any other trunk line. The mere question of direct shipment or of avoiding the cost of transfer to any other line may cause the commodity to go to New York regardless of distance, or perhaps of greater advantages offered at certain times by rival lines or rival markets. Conditions of a similar nature also operate in favor of the other sea-ports.

A second condition under which the trunk lines between the West and the seaboard engage in "through traffic" is that *the amount of grain and other western products transported to each Atlantic sea-port for exportation to foreign countries depends largely upon the available supply of tonnage for such shipments at the several ports.* It is found that the grain-trade of a port cannot be increased very much out of proportion to its total commerce; or, in other words, that the grain-trade is essentially a part of a great whole, and not an independent branch of commerce. Grain which, on account of the geographical situation of the point of production, would, all things else being equal, go to Philadelphia, may, on account of the scarcity of tonnage at that port, be diverted to New York. The latter city, by virtue of its enormous shipping interests, thus determines the direction of a very large amount of the general trade between the West and foreign countries.

The trunk lines terminating at Montreal, at Boston, at Philadelphia, and at Baltimore have been able to secure the control of a part of the foreign trade by means of improved facilities for the transfer of freights from cars to seagoing vessels, and through the new and improved mode of shipping commodities on direct consignment from points at the West to Europe.

For the purpose of effecting this object certain of the trunk lines have entered into combinations or agreements of some sort with steamer-lines making regular trips between the respective sea-ports and the principal commercial ports of Europe, and they have also aided directly or indirectly in the establishment of such ocean steamer-lines. In addition to the steamer-lines, however, a very large amount of sailing tonnage, not engaged in any particular traffic, is always required in order to meet un-

expected demands in any particular direction. Especially is this true with respect to the transportation of grain, the movements of which are exceedingly fluctuating, not only from week to week, but also from year to year. This requirement is met in the largest degree at New York, where shipping of all kinds, both sailing-vessels and steamers, is generally free from any sort of combination of interest with the transportation-lines to the interior.

On pages 86 and 87 of the Appendix may be found a statement, prepared by Mr. Charles Randolph, which indicates the relative through charges which prevailed during the year 1876 for the transportation of wheat from Chicago to Liverpool *via* Baltimore, Philadelphia, New York, and Montreal, respectively.

The total through charges by the various routes at the time Mr. Randolph presented his statement were as follows:

	Cents per bushel.
Via Baltimore	34.16
Via Philadelphia	34.28
Via New York	34.95
Via Montreal	36.30

The closeness of the competition may be seen from the fact that the difference between the charges via the three Atlantic seaports of the United States was only eight-tenths of a cent, and that the charges via Montreal were but one and a half cents higher than those via New York.

A third condition under which the trunk lines engage in traffic between the West and the seaboard is that the *amount of western traffic over each one of the trunk roads is to a great extent limited by the demands at interior points on its line and at its terminus or termini on the Atlantic seaboard.*

Flour and other products of the State of Michigan, purchased for the purpose of supplying the local demands at points in the States of West Virginia, Maryland, or Pennsylvania, on or near the main line or branch lines of the Baltimore and Ohio Railroad, must necessarily be transported to such points over that road, although in moving to these points it may cross all the other great trunk lines. Such traffic is considered "local" or "non-competitive." The local demands of the city of Baltimore may be met by the Baltimore and Ohio or by the Pennsylvania Railroad, since both of these roads have connecting lines from the State of Michigan to Baltimore. But the more northerly roads are not competitors for this traffic. Grain raised in the southern part of Illinois and shipped to interior local markets in the States of Pennsylvania, New Jersey, New York, or the New England States will almost invariably be transported over the line forming a direct connection between the point of production and the point of consumption, as traffic of this character is in the least degree competitive. Grain and western products shipped to New York and to Boston for local consumption will generally be transported over direct lines terminating at one or the other of these points.

In the cases just adduced the geographical situation of the point of production and of the point of consumption mainly determines the route, since it is confined to one or two lines. Other lines would compete, if at all, under very great disadvantages with respect to time, distance, and transfer of freight from one vehicle to another.

THE COMPETITIVE INFLUENCE OF THE TRUNK LINES AND OF THE ATLANTIC SEAPORTS DIFFERS WITH RESPECT TO DIFFERENT COMMODITIES.

The competitive influence of the various trunk lines and of the several Atlantic seaports differs very widely with respect to different commodities. Certain commodities furnish a large amount of competitive traffic, whereas other commodities, perhaps produced in the same locality, are in a very much less degree competitive. Cotton being a commodity of high value, in proportion to its weight and bulk, and being transported great distances, is in the highest degree competitive with respect to almost all the great trunk lines of the country and with respect to many rival markets. Hay, potatoes, and vegetables, being heavy commodities of low value and produced in almost every State and county, are in the lowest degree competitive. They constitute a part of the local traffic of railroads and of the local trade of the several Atlantic sea-ports, since each port has to a great extent its separate sources of supply.

The contests which have been going on during the last four years with respect to the movements of grain from the West to the seaboard render it a matter of much interest to note the characteristics of the different cereals with respect to the competitive forces of transport and of trade. Wheat, wheat flour, and corn, being largely exported, are to that extent in a high degree competitive as to the interests of the several ports. Oats, barley, and rye, on the other hand, are exported in very limited quantities, and are, therefore, both with respect to the interests of the several trunk lines and of the several seaboard cities, regarded as "local" or "non-competitive" commodities. During the year 1876 there was received at the ports of Portland, Boston, New York, Philadelphia, and Baltimore 161,312,646 bushels of wheat, wheat-flour, and corn, and 30,814,570 bushels of rye, oats, and barley; and there were exported 103,354,171 bushels of wheat, wheat-flour, and corn, and 2,678,788 bushels of rye, oats, and barley, or, in other words, of the wheat, wheat-flour, and corn received, 64 *per cent. was exported*, and of the rye, oats, and barley received *only* 9 *per cent.* was exported. Grain shipped to each of the Atlantic seaports for local consumption naturally forms a part of the traffic of the roads which afford the facilities of direct shipment.

THE INTERESTS OF THE TRUNK LINES AND OF THE SEABOARD CITIES ARE NOT ALWAYS IDENTICAL.

In order to appreciate the conditions which determine the course of trade between the West and the seaboard, it is important to note the

fact that the interests of the trunk lines and of the sea-ports which respectively constitute their eastern termini are not in all respects identical, although not necessarily antagonistic.

The interests of the trunk roads are sometimes apparently at variance with the interests of their eastern termini.—The interests of the New York Central Railroad with respect to its "through traffic" are closely identified with the commercial interests of New York City, and yet the managers of that road find it to their interest to develop traffic between the West and the New England States, since this traffic passes over 297 miles of their road from Buffalo to Albany. The interests of the road are most intimately related to the commercial interests of the city of New York; yet its managers would not attempt to force New England freights to New York, thence to be distributed to the New England States, as was the practice when the Erie Canal was the only avenue of commerce between the West and the seaboard. Any attempt of this kind would simply be to abandon the New England business to some existing road or to some new road which would inevitably be constructed in order to supply the demands of the New England States for direct trade. The New England traffic of the New York Central Railroad, [which is said to constitute about 60 per cent. of its through traffic,] by increasing the volume of its total traffic, greatly reduces the cost of transportation and thus affords to New York City the advantages of cheap transportation.

In like manner the interests of the Baltimore and Ohio Railroad are closely allied to the commercial interests of the city of Baltimore; yet the management of that road find it to their interest to carry western products consigned to Philadelphia to New York and to Boston. This they are able to do by means of their eastern connections, viz, the Philadelphia, Wilmington and Baltimore Railroad to Philadelphia, and the Pennsylvania Railroad line from Philadelphia to New York; also, the interior water-line formed by the Chesapeake Bay, the Chesapeake and Delaware Canal, the Delaware River, and the Delaware and Raritan Canal to New York, and the outside lines by the ocean to Philadelphia, New York, and Boston.

The Baltimore and Ohio Railroad Company has its soliciting-agents at Philadelphia, at New York, and at Boston for the purpose of securing a share of the west-bound freight to points reached by its western lines and their connections. In so far as possible, the managers of this road undoubtedly direct traffic in the interest of Baltimore, but their power to do so is not absolute. In competing for traffic to and from other Atlantic seaports, they must afford to that traffic all necessary facilities.

The additional traffic secured to and from other cities than Baltimore, by increasing the business of the road tends to reduce the cost of transportation and thus incidentally to advance the commercial interests of that city.

It may be stated generally that the managers of all the trunk lines,

while recognizing the importance of affording the greatest possible facilities to their respective terminal cities, are coming to realize the fact that the interests of the transporter may best be subserved by interfering as little as possible with the natural course of commerce. The merchants also realize the fact that their interests may best be subserved by conducting their business without any special reference to the interests of the transporter. Commerce can only be prosperous so long as it is free. It can never be bound to the car-wheel of any railroad company. Its course, its limits, and all the forces which control its movements are of a different character from those which surround the managers of transportation-lines. The economies, and the considerations which govern men in trade, not only differ from, but are oftentimes opposed to, those which shape the judgment and form the policy of the managers of railroads. No commercial city can become so wedded to any one or more transportation-lines that it can afford to neglect commerce which would naturally come to it from other lines than the one upon which its prosperity mainly depends, nor, on the other hand, can a railroad company refuse to allow traffic to pass over its line, or over a part of its line, even if such traffic should afterward be diverted to another market than the one with which its interests are most closely identified.

In many important features, the interests of transportation and of trade are correlative, yet there are certain incompatibilities of interest which forbid that they should be very closely joined together. Many years ago the city of Baltimore held a very much larger proportion of the stock of the Baltimore and Ohio Railroad than at the present time, and the city directors, in connection with the State directors, controlled the policy of the road. But the road did not prosper. Subsequently a change took place in its management, and the road has ever since been conducted upon the strictly business principle of making its interests paramount to all other considerations in the conduct of its affairs. Traffic of all kinds has been secured, without regard to source or destination, and the road has become in the largest sense a commercial highway. The adoption of this line of policy not only rescued the road from stagnation and apprehended disaster, but it has been the means of greatly advancing the interests of Baltimore and of establishing her commercial independence. Experience proves that attempts by common carriers to control commercial movements are against public policy, and that such attempts create popular discontent and ultimately lead to disaster.

In practice many curious and perplexing questions arise as to the relative rates which shall prevail between the West and the several rival Atlantic seaports. A single illustration will suffice upon this point. When a war of rates is begun at New York, it becomes necessary for the Baltimore and Ohio Railroad to reduce its rates to and from New York in order to be able to secure a share of western traffic to and from that point. If, at the same time, upon its much more important traffic

between the West and the city of Baltimore rates are maintained, it is evident that a discrimination would arise as against the interests of the city of Baltimore and in favor of New York, and this discrimination might go to the extent of carrying freights to and from New York through the city of Baltimore for less than the rates to Baltimore. It then becomes a nice question of expediency with the railroad company as to whether they should reduce their rates on their main traffic to the city of Baltimore, in order to meet the rates on their comparatively small traffic to the city of New York—rates which have been reduced upon compulsion, and as the result of a struggle between other roads.

A very important question also arises with respect to the interests of the city of Baltimore, as to whether its most important avenue of commerce with the West should be allowed to discriminate against it in the interest of a rival seaport. It may be added that, even if the Baltimore and Ohio Railroad were to pursue the policy of attempting to conform its through rates at all times to the rates to and from other seaports, such changes might create other discriminations, and it might therefore prove to be expedient, even in the light of the interests of the city of Baltimore, for the Baltimore and Ohio Railroad to maintain its normal freight-charges rather than encourage those capricious fluctuations which are detrimental to the interests of commerce. Questions of this character belong to the details of railway management. The determination of each case depends upon the circumstances surrounding it, and upon the views with respect to the relations of the railroads to the public which may from time to time prevail.

The interests of the seaboard cities are sometimes apparently at variance with the interests of the trunk lines.—There are circumstances involved in the adjustment of competitive rates between the West and the seaboard which relate especially to the interests of the markets and to the various industrial enterprises of rival seaports. Traffic which is apparently local with respect to the trunk lines may be in a marked degree competitive with respect to the interests of these cities. This may be illustrated as follows: A firm in New York City engaged in the manufacture and sale of linseed-oil receives large quantities of linseed from the West. Shipments to them necessarily come direct from the point of production, and the trunk lines to other cities are not regarded as competitors for this traffic. In the current phrase of managers of railroad traffic, such shipments are considered to be "local to New York." There is also a firm in Baltimore engaged in the same business and also receiving linseed from the West, the rail-rates on this commodity being 13 per cent. less than the rates to New York. The transportation of linseed to this firm by the Baltimore and Ohio Railroad is also considered to be local to that road, since it is shipped for the purpose of meeting a local demand at the city of Baltimore. Nevertheless, this traffic is competitive with respect to the interests of the two cities. Two-thirds of the weight of the product of linseed when crushed is oil-cake, a

Grain (including flour) exported.

Year ending December 31—	Boston.	New York.	Philadelphia.	Baltimore.	Total.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1873	2, 145, 364	54, 020, 056	4, 807, 620	9, 049, 545	70, 022, 585
1874	3, 186, 318	66, 263, 946	6, 671, 334	12, 555, 090	88, 676, 688
1875	3, 987, 959	50, 599, 710	8, 846, 658	11, 407, 499	74, 841, 826
1876	6, 043, 298	55, 253, 686	22, 016, 515	24, 761, 307	108, 074, 866
Total	15, 362, 939	226, 137, 398	42, 342, 127	57, 773, 441	341, 615, 905

Comparing the data embraced in the statement of exports with the statement of receipts, it will be seen very clearly that the diversion of grain from New York to other points is due largely to the export-trade, and not in any very considerable degree to increased local consumption or distribution to points in the United States. This is shown by the following statement:

Increased receipts and exports of grain, (1876 over 1873.)	Boston.	New York.	Philadelphia.	Baltimore.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Increased receipts	4, 947, 792	3, 811, 271	10, 597, 688	18, 465, 013
Increased exports	3, 897, 934	1, 233, 630	17, 208, 895	15, 711, 762

Making due allowance for the fluctuations in the movements of commerce, it is evident that the competition of the seaports mentioned in the grain-trade relates mainly to the exportation of grain to foreign countries.

Grain being the chief commodity now relied upon for export cargoes of vessels, it is evident that any great and permanent increase in the grain-trade of any port must naturally lead to an increase of imports at that port, and thus to a general diversion of commerce. On pages 253 and 254 of the Appendix may be found a table showing the receipts, exports, and local consumption of flour and grain of all kinds at Boston, New York, Philadelphia, and Baltimore during the years 1873, 1874, 1875, and 1876, compiled from statistics prepared by Theo. F. Lees, general agent of the New York Cheap-Transportation Association. By a careful inspection of this table it will be seen that the diversion of grain which has been described is almost entirely due to *the diversion of corn alone.* There has been no very marked change in the relative receipts and exports of wheat and wheat-flour at these ports since the year 1873, as appears from the following tables:

Statement showing the receipts of wheat and wheat-flour (flour reduced to bushels) at Boston, New York, Philadelphia, and Baltimore during the years from 1873 *to* 1876, *inclusive, and the percentage of such receipts at each port.*

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	9, 857, 107	12	52, 194, 366	65	9, 346, 000	12	9, 373, 677	11
1874	10, 814, 452	11	62, 099, 422	62	12, 479, 880	13	14, 262, 819	14
1875	9, 224, 969	11	54, 357, 147	61	13, 501, 750	15	11, 368, 883	13
1876	9, 689, 692	13	46, 324, 831	61	9, 550, 035	12	10, 693, 264	14

Statement showing the exports of wheat and wheat-flour (flour reduced to bushels) at Boston, New York, Philadelphia, and Baltimore during the years from 1873 to 1876, inclusive, and the percentage of such exports at each port.

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	1,642,933	4	36,061,744	83	2,654,015	6	2,955,927	7
1874	2,500,956	5	45,701,447	80	2,222,848	4	6,384,009	11
1875	2,140,341	4	36,076,679	79	4,105,794	8	4,329,879	9
1876	1,456,870	3	34,720,245	79	3,926,074	9	3,832,221	9

It also appears from the following statements that there has been little relative change in the receipts of oats and barley at the four principal Atlantic seaports.

Statement showing the receipts of oats and barley at Boston, New York, Philadelphia, and Baltimore during the years from 1873 to 1876, inclusive, and the percentage of such receipts at each port.

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	3,996,213	16	12,833,500	51	7,042,457	28	1,255,072	5
1874	3,455,884	15	12,952,960	54	5,941,900	26	1,149,188	5
1875	3,363,940	13	14,595,094	57	6,473,100	26	977,514	4
1876	3,420,839	13	17,008,904	62	5,838,850	22	810,282	3

Statement showing the exports of oats and barley at Boston, New York, Philadelphia, and Baltimore during the years from 1873 to 1876, inclusive, and the percentage of such receipts at each port.

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	.....	.....	89,655	78	25,997	22	.....	.....
1874	.....	.....	128,349	79	30,671	19	2,824	2
1875	.....	.....	132,471	80	33,810	20	.....	.....
1876	19,938	1	801,431	47	842,217	50	27,535	2

It appears from the foregoing statements there has been no marked change in the course of the traffic in *wheat*, *oats*, and *barley*, owing to the fact that the receipts of those grains at the seaports are very largely for local consumption or for shipment to points along the Atlantic seaboard in the United States, and therefore that the transportation of those commodities is competitive in a comparatively low degree.

It appears, however, from the following statements, that the corn traffic is subject to very different conditions in so far as relates to competition between the several trunk lines and between the four principal Atlantic seaports.

Statement showing the receipts of corn at Boston, New York, Philadelphia, and Baltimore during the years from 1873 *to* 1876, *inclusive, and the percentage of such receipts at each port.*

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	5, 558, 363	12	24, 680, 831	52	8, 238, 400	17	8, 830, 449	19
1874	3, 303, 041	8	29, 661, 443	61	5, 954, 700	10	9, 355, 567	21
1875	5, 346, 340	12	22, 183, 077	50	7, 960, 000	17	9, 567, 141	21
1876	9, 005, 375	11	26, 645, 599	34	19, 420, 825	25	24, 684, 230	30

Statement showing the exports of corn at Boston, New York, Philadelphia, and Baltimore during the years from 1873 *to* 1876, *inclusive, and the percentage of such exports at each port.*

Calendar year.	Boston.		New York.		Philadelphia.		Baltimore.	
	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.	Bushels.	Percentage.
1873	162, 727	1	16, 168, 152	65	2, 202, 368	9	6, 093, 618	25
1874	360, 254	2	18, 647, 114	68	2, 203, 588	8	5, 959, 767	22
1875	1, 551, 576	6	12, 980, 670	49	4, 601, 586	18	6, 980, 442	27
1876	4, 160, 817	7	16, 470, 935	28	16, 754, 718	29	20, 751, 343	36

The foregoing statements in regard to *corn* indicate that there has been a very marked change in its movements to the seaboard, and that this change is due almost exclusively to the exportation of it to Europe.

Each one of the trunk lines having nearly equal advantages for the foreign trade afforded by steamer-lines and sailing-vessels to ports in Europe, the cost of transportation by these several routes from western points to the grain markets of Europe is very nearly equal. Therefore, as already explained, the corn traffic is competitive in a very high degree, both with respect to the interests of the trunk lines and of the four principal Atlantic seaports.

The following statement shows the increased receipts of *grain* during 1876 over those of 1873, in comparison with the increased receipts of *corn* during 1876 over those of 1873:

Increased receipts of 1876 over those of 1873.	Port.			
	Boston.	New York.	Philadelphia.	Baltimore.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
Increased receipts of grain	4, 947, 790	3, 811, 271	10, 597, 688	18, 465, 013
Increased receipts of corn	3, 447, 012	1, 964, 768	11, 182, 425	15, 853, 781

This statement very clearly shows that the diversion of the grain-trade from New York and the increase in the grain receipts at Boston,

Philadelphia, and Baltimore is due almost entirely to the diversion of the corn-trade alone.

While the exportation of wheat, flour, rye, oats, and barley has exhibited little change with respect to the interests of the various trunk lines and of the Atlantic seaports, *the exportation of corn* has changed as follows: The exportation from Boston has increased from 1 to 7 per cent.; at New York it has decreased from 65 to 28 per cent.; at Philadelphia it has increased from 9 to 29 per cent.; and at Baltimore it has increased from 25 to 36 per cent. of the total receipts at the four ports.

This remarkable diversion in the corn-trade appears to be mainly attributable to the following causes:

First. Corn being a commodity of low value in proportion to weight, its movements have been greatly influenced by the small difference in rates which have prevailed in favor of the Pennsylvania and the Baltimore and Ohio Railroads, in consequence of the excellent facilities for the transfer of grain from railroad-cars to steamships at the ports of Philadelphia and Baltimore, in connection with the arrangements which have been perfected at those ports for the direct shipments of grain from interior points to Europe.

Second. The cargoes from the United States to Europe being now much in excess of the import-cargoes, vessel-owners are free to seek export-cargoes wherever they can be obtained, and the advantage as to the available supply of ocean-tonnage does not operated so strongly in favor of New York as formerly.

Other commodities for which the Pennsylvania Railroad and the Baltimore and Ohio Railroads afford direct transportation in connection with ocean-lines to Europe have also to a considerable extent followed the direction of the corn-trade. It is, however, declared by those who are familiar with the grain-trade that the diversion of corn from New York to other ports during the year 1876 was very largely due to an exceptional circumstance affecting the crop of the year 1875. It is said that the corn-crop of the more northern corn-producing district was injured by dampness, and did not come to maturity, so that it reached the market in a bad condition and unfit for exportation, whereas the crop of the southern portion of the corn-producing area came to maturity in good condition, and was alone available for meeting a large and unexpected foreign demand.

The foregoing facts have been adduced with the view of showing as clearly as possible, by available characteristic data, that there are very many conditions affecting the competitive traffic between the west and the seaboard, that these conditions are variable, and that they are so intimately blended that it is impossible to prescribe geographical or commercial limits to the traffic of any line or to the trade of any seaboard city.

It is impossible within the prescribed limits of this report to consider more fully the comparative advantages held by the various seaports for

supremacy or for the control of any particular branch of commerce. The facts stated fall far short of a complete development of this great and important subject, for it embraces all the elements of the prosperity of commercial cities, including their capital, the force of associated enterprises, the energy, tact, and persistency of their merchants, the manner in which their interests are affected by the tariff upon imported goods, and by the rapidly-increasing power of American manufactures, the geographical position of water and rail lines, and the available supply of coal, iron, lumber, and all other commodities which go to meet the wants or to contribute to the commerce of a great city.

Facts which indicate the relative magnitude of the commerce of the four principal Atlantic seaports.

There are no available data affording an accurate comparative view of the total internal and foreign commerce of the various seaports based upon either the quantity or the value of commodities. The following statement in regard to bank clearing-house transactions at Boston, New York, Philadelphia, and Baltimore affords an approximate indication of the relative magnitude of the commerce of the four cities. To what extent the clearances at New York embrace transactions not properly representative of the commerce of that port cannot be ascertained.

Clearing-house returns for the month of January, 1877.

Cities.	Number of banks.	Total amount of transactions.	Per cent. at each city.
New York	59	$72, 052, 000	81
Boston	51	8, 436, 000	9
Philadelphia	27	6, 826, 000	8
Baltimore	20	1, 853, 000	2
Total	157	89, 167, 000	100

The relative value of the foreign commerce of the four principal Atlantic seaports is presented in the following table, showing the value of imports and exports at each one of these ports during the year ending June 30, 1876:

Cities.	Value of imports.	Value of exports.	Total value of foreign commerce.	Per cent. at each port.
New York	$311, 712, 910	$294, 705, 902	$606, 418, 812	76. 2
Boston	37, 416, 623	36, 041, 892	73, 458, 515	9. 3
Philadelphia	22, 471, 516	40, 254, 075	62, 725, 591	7. 8
Baltimore	22, 340, 629	31, 216, 807	53, 557, 436	6. 7
Total	393, 941, 678	402, 218, 676	796, 160, 354	100. 0

The clearing-house transactions at New York appear to constitute 81 per cent. of the total clearing-house transactions at Boston, New York, Philadelphia, and Baltimore, and the foreign commerce of New York appears to be 76 per cent. of the total foreign commerce of the same cities.

These statistics, in connection with the facts already presented in regard to the grain-trade, prove that the movements of any particular commodity, even one of prime necessity, do not afford an indication of the general course of trade or of the relative magnitude of the commerce of the great seaports. Although a larger quantity of corn is passing through Baltimore than through New York, the total commerce of Baltimore, in so far as indicated by clearing-house transactions, is but 2½ per cent. of the commerce of New York, and, in so far as indicated by exports, the commerce of Baltimore is less than 9 per cent. of the value of the foreign commerce of New York. There is a certain territory directly tributary to the trade of Baltimore, and each one of the Atlantic seaports has a separate local trade, and enjoys peculiar advantages for trade with the West, with the South, and with foreign countries. The city of New York can rely for the maintenance of its commercial supremacy upon its enormous capital; the geographical advantages of its position as a distributing point; its direct connections with all parts of the United States by rail and water lines; the exclusive advantages of that important line of transportion formed by the lakes, the Erie Canal, and the Hudson River; the persistency of its established commercial relations with almost every country on the globe; the energy and intelligence of its merchants, and the fact that it is the chief monetary center of the western continent.

The foregoing statistics in regard to the movements of grain simply serve to illustrate certain important trade-currents and to throw light upon the question of transportation, but they evidently fall very far short of conveying adequate information upon which can be based any prediction as to the future prosperity or decadence of commercial cities.

GENERAL RAILROAD MANAGEMENT IN REGARD TO THROUGH TRAFFIC.

The facts already presented, which point to the impracticability of drawing any exact lines of demarkation between the local and the competitive traffic of the several trunk lines and between the local and the competitive trade of the several seaboard cities, also serve to throw light upon the competitive struggles between the railroads connecting the West with the seaboard, and to explain the difficulties which the managers of these lines have encountered in their efforts to protect themselves against themselves—efforts which have generally terminated in the often-recurring and protracted railroad wars. The effort to adjust competitive rates between the West and the seaboard began about twenty years ago, when the Erie and the New York Central Railroads had extended their lines to Lake Erie, and the Pennsylvania and the Baltimore

and Ohio Railroads had reached the Ohio River. Then the adjustment of through rates was simply a question of detail in the discharge of the executive duties of general freight agents; but it has now become a great question of administration, affecting the entire internal and foreign commerce of the United States. The increased magnitude of the interests affected has rendered it necessary to adopt new methods in the management of competitive traffic, and has called for the employment of men endowed with the intellectual grasp and vigor requisite for comprehending and administering the affairs of a great railroad organization. Men capable of adjusting the freight-tariffs of a railroad so long as its traffic was practically a monopoly, and the only question as to rates was "how much each commodity would bear," have been superseded by a class of men of broader views, competent to understand and to grapple with the difficulties incident to the management of the transportation and commercial interests of the present day.

The internal commerce of the country is year by year becoming more complex as the interests of transportation and of trade increase in magnitude and importance. No one foresaw the results already reached by the railroad system. Certain customs with respect to traffic and travel on railroads, have been established and have become authoritative under decisions of the State and Federal courts. Other customs touching the relations of the railroads to each other and to the public will undoubtedly in time acquire the force of law. Thus we may expect that by the slow, but sure process of adjustment the rights of the railroads and of the public, with respect to all the new issues of transportation, will in time become firmly established and that competition will remain the stimulus and the vital force of commercial enterprise.

TERMINAL FACILITIES.

There is another subject touching the interests of the great trunk lines and of the several seaport cities, which is worthy of special notice, and that is *the question of terminal facilities*. The direct conveyance of merchandise without breaking bulk, from the point of shipment to the point of destination, and the most approved facilities for the transfer of freights from one vehicle of commerce to another, where such transfers must necessarily be made, constitute very important commercial requirements of the present day. To effect the former object, "through freight-lines" have been formed and expensive bridges have been constructed across navigable streams. Railroad companies have also provided union depots in many of the large cities for the economical transfer of both freights and passengers. Elevators and warehouses have been constructed at ports on the coast, on the lakes, and on the western rivers, in order that freights might be cheaply and expeditiously transferred from one vehicle to another, and that advantage might thus be taken of the different markets. Very much, *however, remains* to be done in this direction. It is stated that in cer-

tain cities the cost of transferring freights from one railroad to another through warehouses exceeds the charges for transporting the same freights six or seven hundred miles. It is also stated that in one of the large seaboard cities the cost of handling and carting freight, exclusive of the losses from damage and theft, so frequent under the present disjointed system, is, on the average, about $2 per ton, or 25 per cent. of the cost of hauling grain from Chicago to New York.

One of the most important economies of the present day with respect to trade between the West and the seaboard is the transportation and storage of grain in bulk. This important economy has not only rendered it necessary to supply suitable cars and elevators at terminal points, but also to establish a system of grading under which the railroad companies are enabled to avoid the inconvenience and expense of keeping separate each particular shipment, and to deal with grain it in great masses. Experience has proved the necessity of extending railroad tracks into the business portion of commercial cities for the purpose of effecting the receipt and delivery of goods of all kinds with the least possible expense of handling and cartage. This is a requirement which has only been properly appreciated during the last five or six years. Formerly a railroad depot within the limits of a city was regarded as in some sense a nuisance, to be tolerated only at the very outskirts.

The necessity of providing the amplest means for the flow of commerce has led to the establishment of excellent terminal facilities at Boston, Philadelphia, and Baltimore. The city of New York has not yet fully come up to the new order of commercial requirements in this regard, and the fact has already operated prejudicially to the interests of that city. There are several reasons for this tardiness at the chief commercial center of the western continent. Extensive and very costly facilities were provided many years ago, especially adapted to the requirements of commerce on the Erie Canal and the Hudson River in connection with ocean commerce, the harbor of New York being the great distributing depot of that commerce. But in addition to these facilities the success of commercial enterprises now requires a line of adaptations embracing the ship, the railroad car, and the modern warehouse, with its appropriate spaces and mechanical improvements. The commercial habits of the great city of New York were formed during the period in which she attained her commercial ascendency, and while the Erie Canal remained almost the sole avenue of commerce between the West and the seaboard. It appears to be necessary in advancing to the new order of things to overcome the force of a conservatism fortified by the habits of half a century and involving millions of capital. A difference of views as to the plans which should be adopted has led to delay at New York, but it may be confidently predicted that the merchants and capitalists of that city will not in the end fail to make the best possible use of all the means which nature and art have placed within their power.

A plan has been proposed by the New York Cheap Transportation Association and endorsed by several of the commercial bodies of that city. This plan embraces railroad tracks around the entire city, with warehouses upon or adjacent to the wharves, such warehouses being provided with ample facilities for the loading and unloading of all classes of freights. Terminal facilities of this character have been adopted at Portland, Me., at Boston, at Philadelphia, and at Baltimore. The plan proposed or some other practical one will undoubtedly be adopted at New York. Venice was reclaimed from the sea, and her canals, wharfage and warehouse facilities were adapted to the peculiar exigencies of her commerce. Vast docks have been constructed at London and Liverpool at enormous expense, in order to meet the demands of commerce, and to provide against the difficulties incident to the rise and fall of the tides, and those cities have in their turn become the centers of European commerce. New York City cannot long delay providing a system of terminal facilities adapted to the requirements of the present day and commensurate with the magnitude of her enormous commerce.

CONCLUDING REMARKS IN REGARD TO COMPETITION IN THE COMMERCE BETWEEN THE WEST AND THE SEABOARD.

The practical difficulties which have arisen as the result of competition between railroads and between rival markets embrace the more salient features of what is commonly known as "the railroad problem of the day." During the last three years there has been much speculation as to the tendency of our railroad system, and as to the remedies which should be provided against existing or anticipated evils. For many years it was apprehended that the railroads might become absolute monopolies, and that competition in the carrying trade might be utterly broken down, but within the last two years it has been urged that competition has failed to secure the ends of justice and stability, and therefore that it is no longer to be relied upon. It is asserted that competition is an irresponsible force, that its essence is instability, and that so long as it continues, systematic justice cannot be done. This conclusion appears to be based upon the assumption that, in the commerce between the West and the seaboard, the struggle is confined to four or five great railway organizations. It has, however, been hereinbefore shown that the struggle embraces the competition of many lines and of many commercial forces, which overshadow the power exercised by the managers of the great trunk lines. This is clearly understood, and in practice fully recognized by men engaged in extensive mercantile operations, and by the managers of great railroad interests. The evils incident to competition are sharply defined and incisive, but the benefits which it affords are substantial and pervading. The beneficent law of supply and demand where it operates most freely may not secure systematic justice, and yet the whole world concedes that, so far as it is operative, it secures substantial justice. This is all that can be expected in the present condition of human affairs. Competition may not

make all things even, but it affords a nearer approach to equitable dealing among men than any substitute which has yet been proposed for the natural laws of trade. The very *instability* of competition is the surest safeguard of the public interests. When competition ceases to be irresponsible, monopoly will step in, unless it be substituted by the autocratic rule of a combination sufficiently powerful to control all the transportation-lines of the country. Any arbitrary rule in whatever manner formulated, or by whatever agency exercised, would prove to be an impotent substitute for the great beneficent law of competition in the irresponsibility and instability of which is embraced that conservatism which inheres in the untrammeled operations of natural forces.

So intimately are the interests of transportation and of trade connected that it is impossible to eliminate competition between the railroads without doing violence to commercial interests, and thereby working greater evils than those sought to be removed. It is well known that within the restraints imposed by the various forces of competition, a comparatively narrow range of discretionary power is left to the railroad companies in regard to their "through traffic." The rates which have at times prevailed especially for the transportation of grain on the east and west trunk lines during the last two years are said to have involved an actual loss to the companies. Earnest efforts have been made by the managers of the great trunk lines to advance freight charges, but the competition has been so strong that they have been unable to effect that object. The public have thus secured the benefits of cheap transportation.

But the practical results of competition between railroads and between trade forces are before us, and we may learn the effects of these forces upon the adjustment of freight-tariffs. The following table presents the average charges per ton per mile during the last eight years on several important trunk lines of the United States largely engaged in transportation between the West and the seaboard.

Statement showing the gradual reduction in freight-charges per ton per mile on several transportation-lines engaged in commerce between the Western States and the Atlantic seaboard, from 1868 *to* 1876 *inclusive.*

Railroads.	Years.								
	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
New York Central	2.59	2.20	1.86	1.65	1.69	1.57	1.47	1.27	1.05
Pennsylvania	1.90	1.72	1.55	1.34	1.42	1.42	1.26	1.06	.89
Erie	1.92	1.60	1.37	1.47	1.52	1.45	1.31	1.21	1.07
New York State canals	.88	.92	.83	1.02	1.02	.88	.73	.66	.68
Boston and Albany	2.43	2.19	2.09	2.02	1.96	1.82	1.53	1.11	.....
Philadelphia and Erie	.....	.....	.....	1.85	1.46	1.36	.94	.87	.77
Lake Shore and Michigan Southern	2.43	2.34	1.50	1.39	1.37	1.33	1.18	1.01	.82
Michigan Central	2.09	1.98	1.61	1.56	1.57	1.30	1.16	1.03	.....
Chicago, Burlington and Quincy	3.01	2.77	2.31	2.19	2.18	1.92	1.90	1.91	.....
Chicago and Northwestern	3.13	.....	3.09	2.87	2.51	2.35	2.10	1.95	.....
Average	2.26	.97	1.91	1.74	1.67	1.54	1.36	1.21	.....

N. B.—In this table the calendar year nearest the several fiscal years is taken.

It appears that the average rates on the New York Central Railroad fell from 2.59 cents per ton per mile in 1863 to 1.05 cents per ton per mile in 1876, a fall of 59 per cent.; the rates on the Pennsylvania Railroad fell from 1.90 cents in 1868 to .89 of a cent in 1876, a fall of 53 per cent.; the rates on the Erie Railway fell from 1.92 cents in 1868 to 1.07 cents in 1876, a fall of 44 per cent.; and that the rates on the New York State canals fell from .88 of a cent in 1868 to .68 of a cent in 1876, a fall of 23 per cent.

It appears that the annual average of the rates stated in the foregoing table fell from 2.26 cents per ton per mile in 1868 to 1.21 cents per ton per mile in 1875, a fall of nearly 50 per cent. in eight years. This decrease has not resulted from voluntary concessions by the great trunk lines over which passes a very large proportion of the internal commerce of the country, but from causes beyond their control, and against which they have striven earnestly but in vain. Another most significant fact is the fall of all-rail grain-rates from Chicago to New York from 45 cents per 100 pounds in 1869, to 16 cents per 100 pounds during a part of the year 1876, the rates during the latter year being little more than one-third of those which prevailed but seven years before.

These facts carry with them their own argument. The reductions in freight-charges are the result of competition, and they have been of incalculable advantage to the commercial and the agricultural interests of the country.

Attention is called to the fact that the foregoing table illustrates the *average reduction of rates on both "through" and "local" traffic*, the local traffic of all the roads being the chief source of revenue. The reduction of local rates has resulted mainly from competition between the various markets of the country, a result in conformity with the general reduction of prices during the last four years.

Local rates are still remunerative, and it is believed that "competitive rates" may, within the limits of clearly-defined mutual interests, be so adjusted through co-operation as not to entail losses upon the companies. No scheme of adjustment, however, can override the forces of competition, and all attempts of the kind must result in disaster.

It has been supposed that in the contests between the trunk lines the strongest company or combination of companies invariably remains master of the field. It has, however, come to be almost an aphorism among railroad managers that the weakest line determines the rates. It has been seen at Boston that in the struggles between the Grand Trunk Railroad on the one side, and the New York Central, the Erie, and the Pennsylvania Railroads on the other, the Grand Trunk Road, *the weakest of them all*, has remained master of the field. The causes of this apparently paradoxical result have already been explained.

It has also been supposed that the combination between the railroads of the country is yearly becoming closer and more powerful. The facts which have been hereinbefore adduced seem to indicate, however, that

the extension of the railway system has tended to create new elements of competition, and to render the adjustment of through rates more difficult. Every trunk line has many interests outside of, and which cannot possibly be embraced within the terms of any combination with other trunk lines, and it has been found that sooner or later these collateral interests lead to the infraction of any conditions which the ingenuity of railroad managers has yet been able to devise. The difficulty appears to be that, heretofore, competing companies in attempting to protect themselves against themselves, have failed to arrive at a clear understanding of the nature and limits of their mutual interests.

As the promoters of the great railroad organizations connecting the West with the seaboard have pushed their lines westward, they have seen their control over "through rates" gradually becoming weaker and weaker, and the idea has been suggested in the interests of the railroad companies, by able men, that the roads ought to invoke some external aid in order to maintain remunerative rates, or at least to avoid the necessity of at times, carrying through freight at an absolute loss. Evidently, it would be detrimental to the public interests if the railroads of the country were to become crippled by their own excesses, but in view of the beneficial results which have been realized from the regulating influence which competition has exerted over rates in the great commerce between the West and the East, and between all important centers of trade which enjoy the advantages of two or more rival lines, the people will watch with favor the gradual extension of the railway system by which means the limits of the local or non-competitive traffic are being contracted and the limits of the competitive traffic enlarged.

It appears probable that as the facilities of transportation are more widely extended many injurious discriminations will disappear, and that the legitimate limits of the traffic of rival companies will become more clearly defined. It is also to be hoped that the various companies will, upon enlightened views of self-interest, formulate and acquiesce in such regulations with respect to their common interests as to prevent the occurrence of those sudden changes of rates which cause erratic diversions of traffic from one line to another; results which tend to destroy confidence not only in railroad securities, but in the value of the entire property of commercial cities. Such changes of rates tend to depress and not to advance commerce.

7.—COMMERCIAL MOVEMENTS OF THE UNITED STATES.

It is impossible within the prescribed limits of this report, designed to be merely introductory in its character, to present a treatise covering the entire internal commerce of the country, either on rail or on water-lines. The present consideration of the subject must therefore be confined to certain movements and to statistics and other facts illustrative of some of its more important features.

Prior to the year 1850, commerce between that section of the country now comprising the Western and Northwestern States and the States of the Atlantic seaboard was confined chiefly to the lakes, the Erie Canal, and the Hudson River, and the city of New York enjoyed almost a monopoly of that commerce. The movements of trade between the Western and Northwestern States and the Gulf States was then confined to the Mississippi River and its navigable tributaries, and the city of New Orleans was the seaport for that entire commerce. But a large proportion of both these commercial movements is now shared by railroads.

At first the railroads of the Western States were regarded as being merely tributary to the water-lines, and it was supposed that those natural highways of commerce would continue to be the principal avenues of transportation.

But great changes have taken place during the last twenty-five years. Railroads have become important avenues of commerce, and the whole course and conditions of transportation and of trade have been revolutionized. The cost of transportation having been greatly reduced, the traffic on railroads has increased with wonderful rapidity.

Important commercial advantages have also resulted from the formation of combinations between railroad lines and ocean-steamer lines by which means commodities are transported directly from the point of shipment to the point of destination without breaking bulk. The saving of transfer charges, commissions, storage, expenses, &c., incurred in the old methods of transportation, in connection with the advantages afforded by rapid transit and reduced risks, has tended greatly to increase the value of railroads as commercial highways. At the present time flour manufactured at points in the Northwestern States is being shipped on through bills not only to Atlantic and Gulf ports but to interior points in the seaboard States. For several years grain has been shipped directly from the West to Atlantic seaports and to ports in Europe. Pork products are now being shipped on through bills from interior points in Iowa and Illinois to Europe. This direct trade is rapidly growing, and it carries with it very important commercial and financial results.

The telegraph, in connection with the facilities of rail movements, has also tended to produce great changes in the modes of commerce. The gradual removal of the center of grain-production during the last thirty years from the western part of the State of New York to a point not far from the Mississippi River, has led to important commercial results.

Great changes have also taken place in our foreign commerce in consequence of the establishment of transatlantic steamer lines and of telegraphic communication with the countries of Europe. These changes in maritime commerce have exerted a very important reflex influence upon the internal commerce of the country.

At the present time, cotton is being shipped direct to North Atlantic

ports and to northern factories on railroads. This has already become an important traffic. Cotton is also being transported on the Mississippi and Ohio Rivers to ports above, viz, Cairo, Ill., Saint Louis, Louisville, Cincinnati, and other river towns, and thence by rail to North Atlantic seaports and to northern factories.

The causes which have led to these great changes in commercial movements are still in operation, and perhaps at no previous period in our history has commerce been more truly in a transition state than at the present time. So many predictions in regard to the tendency of trade have proved to be erroneous that it appears to be more profitable to inquire into the causes of the changes which have actually taken place and to describe existing movements, than to attempt to forecast the future.

The most important general divisions of the internal commerce of the United States are: Commerce between the North Atlantic and the South Atlantic and Gulf States; commerce between the Western and Northwestern States and the North Atlantic States; and commerce between the Western and Northwestern States and the Gulf States.

The railroads connecting the North Atlantic with the South Atlantic States constitute the principal avenues of travel, and of transportation for the mails, express goods, and the more valuable freights, but the great bulk of the heavy articles of commerce are transported on the ocean, the cheapest of all commercial highways. Within a few years close connections have been formed at the various ports between steamer lines and railroads, by which means commodities are transported from interior points in the North Atlantic States and from northern seaports to interior points at the South upon direct consignment. This important advance in the modes of transportation and of trade has greatly facilitated commercial intercourse.

For many years the commerce of the Erie Canal has greatly exceeded that of the Mississippi River, but the commerce over two or three of the great trunk railroads connecting the West with the Atlantic seaboard now greatly exceeds the commerce of the Erie Canal. There has been a large and steady growth in the north and south movement between the Western States and the Gulf States, but the growth of the east and west movement between the Western States and the Atlantic seaboard States has been much more rapid. The relative growth and magnitude of the east and west movement and the north and south movement of commerce may be inferred from the facts stated in the sections of this report which relate to the commercial movements to and from Saint Louis, the commercial movements of the States of Iowa and Minnesota, and the movements of the cotton crop. The relative magnitude of these two movements may also be inferred from the amount of grain shipped to the Atlantic seaboard and to the Southern States. It was ascertained by the Senate Committee on Transportation, from statistics furnished by

boards of trade and railroad companies, that the shipments of grain from the Western States during the year 1872 were as follows:

	Bushels.
Shipped east	178,000,000
Shipped south	34,000,000

or about five times as much east as south. A large part of the eastward shipments was for exportation to foreign countries. The proportion of shipments east and south *for consumption in the United States* appears to have been as follows:

	Bushels.
Shipped east	104,877,122
Shipped south	33,783,526

or about three times as much east as south.

The value of the total foreign commerce of the United States (imports and exports) during the year ending June 30, 1876, amounted to $1,121,634,277. Of this grand total our commerce with the countries of Europe constituted $644,956,406, or 58 per cent. The great tide of internal commerce in this country between the Western States and the North Atlantic States seems to have followed the general direction of this enormous European trade. The east and west movement has been greatly stimulated during the last twenty-five years by the construction of the trunk railroads of the North Atlantic States. A similar development of east and west commerce has followed the extension of railway lines from the ports of the South Atlantic States to the Mississippi River as shown by the rapidly increased eastward movement of cotton by rail from Memphis, and the increase of cotton receipts at the ports of Norfolk, Charleston, and Savannah. This latter movement may, however, also be regarded as a north and south movement, since the principal part of the through east and west traffic of the South Atlantic and Gulf States constitutes a very large proportion of the movement between North and South Atlantic ports.

The north and south commerce between the Western States and the Southern States is growing very rapidly, and the manifest possibilities of this movement open a broad field for enterprise, and call for all the practicable aids which can be provided through the improvement of those great natural highways of commerce, the Mississippi River and its principal navigable tributaries.

THE COMMERCIAL MOVEMENTS OF THE NORTHWESTERN STATES AS ILLUSTRATED BY THE TRAFFIC ON THE UPPER MISSISSIPPI RIVER AND OVER RAILROAD-BRIDGES CROSSING THAT RIVER.

In the year 1850 there was not a single mile of railroad in the now wealthy and populous States of Iowa and Minnesota; and all that vast section of country lying west of the Mississippi River and north of the State of Missouri, together with the present State of Kansas, had no railroad communication with the Atlantic seaboard. Minnesota, Kansas, and Nebraska were then in a territorial condition. The limited commerce of this vast region was at that time confined to the Mississippi River and its navigable tributaries, and Saint Louis was the center of trade.

By the completion of the Chicago and Rock Island Railroad in the year 1854, the railway system was extended from the Atlantic seaboard to the Mississippi River, and, by the completion of the Mississippi and Ohio Railroad in 1856, a through east and west rail-line was secured to Saint Louis. The commerce of the States of Iowa and Minnesota and of the States and Territories lying west of those States has been developed chiefly by means of transportation on railroads during the last twenty-five years. The following statements illustrate the wonderful growth of those States, the commercial movements of the Northwest, and the grand possibilities of railroads as commercial highways.

The railroad mileage of the State of Iowa is now about 3,850 miles, and the railroad mileage of the State of Minnesota is about 2,000 miles. These roads are connected with trunk lines extending to all the principal lake-ports, and, by lake and rail, river and rail, and all-rail lines, to the principal Atlantic and Gulf ports, and to all the important interior points in the Atlantic and Gulf States. In order to secure uninterrupted rail-communication between the trans-Mississippi States and the States east of that river, thirteen bridges have been constructed by railroad companies across the Mississippi River between Winona, Minn., and Saint Louis, Mo., at an aggregate cost of $20,183,000, as follows:

At Winona	$200,000 00
At La Crosse boat-crossing	20,000 00
At Prairie du Chien, pile and boat	120,000 00
At Dubuque	800,000 00
At Sabula, temporary	20,000 00
At Clinton	800,000 00
At Davenport, (wagon-bridge built conjointly by the Government and railroad company)	2,000,000 00
At Burlington	800,000 00
At Keokuk	800,000 00
At Quincy	1,500,000 00
At Hannibal	750,000 00
At Louisiana	800,000 00
At Saint Louis	11,573,000 00
	20,183,000 00

At the present time the traffic passing over several of these bridges greatly exceeds the traffic upon the Mississippi River which flows beneath them.

In regard to the southward and eastward commercial movements of Minnesota, Mr. Solberg, of Saint Paul, Minn., says:

A few articles, such as resin, pitch, castor-oil, white lead, and possibly lard-oil, and wooden ware, come chiefly from Saint Louis and New Orleans. The quantity of sugar and molasses from Saint Louis and New Orleans is so small compared with the imports of the same class of goods from the East, that it would be difficult to determine the proportion in the absence of actual statistics. Notwithstanding the rapidly-growing importance of railroads as carriers of our exports and imports, the Saint Louis trade is still largely by river, and is growing less in proportion to the whole business of the State as it grows in population.

Mr. Solberg also states that of the entire surplus products of lumber and grain, constituting the chief commodities, 86 per cent. is shipped directly east by rail and 14 per cent. is shipped south, a large proportion of which is afterward diverted to the east and to the west on railroads crossing the river south of the State of Minnesota.

Col. Milo Smith presents the following statement in regard to the north and south roads of Iowa:

The business of all north and south roads in Iowa is practically eastbound business. The north and south roads carry their traffic to the main east and west trunk lines, and over them it goes to Chicago. There is practically no south-bound business. Nearly all the traffic of the Keokuk and Des Moines Railroad, striking the Mississippi River at Keokuk at the foot of the lower rapids, goes to Chicago. It is safe to calculate that 95 per cent. of the business of Iowa goes to Chicago and Milwaukee.

The general direction of the commerce of Iowa and Minnesota and of that section of the country lying west of the Mississippi and north of the northern boundary of Missouri may also be inferred from facts presented by Mr. Geo. H. Morgan, secretary of the Saint Louis Merchants' Exchange, in reply to inquiries submitted to him by this Department. It appears that the total tonnage received at Saint Louis during the year 1875 amounted to 3,896,295 tons, of which only 413,088 tons or 14 per cent. were received "from the North." These tonnage receipts from the North were from the following sources:

	Tons.
Rockford, Rock Island and Saint Louis Railroad	60,993
Illinois River	153,995
Upper Mississippi River	198,100
Total	413,088

The receipts by the Rockford, Rock Island and Saint Louis Railroad and by the Illinois River were almost exclusively products of the State of Illinois. The total tonnage received at Saint Louis from the north by the Mississippi River (198,100 tons) constituted, therefore, but 5 per cent. of the total receipts at that city during the year 1875. It is proper to say that the above statement, in so far as it represents the direction of the general receipts at Saint Louis, is only approximate, but it fully covers all that can properly be termed "receipts from the north."

Comparison between the traffic of the Mississippi River and the traffic of the railroads which cross it above the city of Saint Louis.

The total quantity of wheat exported from Minnesota during the year 1875 amounted to 23,391,000 bushels. Of this there were shipped south by river, 2,567,694 bushels; shipped east by rail, 20,823,306 bushels. Of the quantity shipped by river it appears that 2,316,985 bushels or 90.2 per cent. was transferred to east and west roads at points below, showing that only 250,709 bushels or 1 per cent. of the total wheat exports of Minnesota was shipped south of the State of Iowa and that 99 per cent. was shipped east.

The following valuable table, showing the general eastern movement over railroad bridges above Saint Louis, was prepared by Col. Milo Smith, of Clinton, Iowa:

	Total tons.	Grain and flour.	
		Percentage of total.	Tons.
At Winona	75,000	80	60,000
At La Crosse	326,330	75	244,747
At Prairie Du Chien	270,560	75	202,920
At Dubuque	220,000	75	165,000
At Sabula	35,833	75	26,868
At Clinton	495,000	75	371,250
At Davenport	412,788	75	309,546
At Burlington	312,295	60	195,177
At Keokuk	19,653	85	16,705
At Quincy	97,640	50	48,820
At Hannibal	43,605	18¼	7,995
At Louisiana	36,710	29	10,645
Total tonnage passing East	2,344,354	.....	1,659,673

The report of the Saint Louis Exchange for 1875 states that the total tonnage of grain which reached that city during the year 1875, by the Mississippi River, amounted to 77,996 tons. It appears, therefore, that the southward movement of grain on the Mississippi River above Saint Louis was but 5 *per cent. of the eastward movement* over railroad bridges. The total tonnage of merchandise (lumber not included) which crossed the Mississippi River by rail appears by the foregoing table to have amounted to 2,344,354 tons, while the total tonnage of merchandise which reached Saint Louis from the north and from territory lying west of the Mississippi River, amounted to 198,100 tons, the river tonnage being but 8 per cent. of the tonnage which crossed the river over the thirteen bridges between Winona, Minn., and Louisiana, Mo.

The movements of the lumber trade of the Upper Mississippi River.

Next in importance to the grain-trade of the Northwest is the lumber trade of the Upper Mississippi and Wisconsin Rivers. The movements of lumber from the forests to the various markets also serve to illustrate the general course of the commerce of the Northwest. All

the lumber of the upper waters of the Mississippi and Wisconsin Rivers, on its way to the various markets, converges at the junction of those rivers near Prairie du Chien. From thence it is rafted down the Mississippi River in the form of logs, boards, shingles, and lath. Every town and city from the mouth of the Wisconsin River to the city of Saint Louis is to some extent a lumber market, and at almost all the principal towns, lumber, lath, and shingles are manufactured for the local demand and for shipment east and west. At every point where a road crosses the river, lumber in its various forms is shipped to interior points. Supplies of lumber are thus shipped from 10 to 100 miles east of the Mississippi, and from 500 to 1,000 miles west of that river. In this manner the principal part of the lumber traffic of the Mississippi River is diverted to an east and west movement.

The following facts in regard to the total movements of the lumber-trade are furnished by Messrs. Berthold & Jennings, lumber-merchants of Saint Louis, who are regarded by the Merchants' Exchange of that city as authority upon this subject. It is estimated that the total product of the pine region in 1875 was 1,060,000,000 feet, board-measure, of which 101,217,880 feet reached Saint Louis. The quantity consumed at river towns and shipped east and west by rail, and the quantity shipped south by river, appear to have been as follows:

	Feet.
Consumed at river towns and shipped east and west	958,782,120
By river to Saint Louis	101,217,880
Total	1,060,000,000

Of the total movement of lumber it appears that 90 per cent. was consumed at river-towns or transported east and west on railroads, and that but 10 per cent. reached Saint Louis.

The quantity shipped south of Saint Louis amounted to only 9,000,000 feet. This indicates that the lumber-trade of the Upper Mississippi practically ends at Saint Louis, and there ceases to be, to any extent, a part of the traffic of the river. By adding the tonnage of lumber to the tonnage of general merchandise which crossed the Mississippi over railroad bridges, and the tonnage of lumber to the tonnage of general merchandise received from the north at Saint Louis, we obtain approximately the comparative shipments east and south from the States of Iowa and Minnesota, as follows:

SHIPPED EAST.

	Tons.
General merchandise	2,344,354
Lumber, (estimated)	150,000
Total eastward movement	2,494,354

SHIPPED SOUTH.

General merchandise	198,100
Lumber	101,217
Total south movement	299,317

The total tonnage moved south appears, therefore, to have been only 12 per cent. of the total tonnage moved eastward.

It is estimated that the average value of east-bound freights crossing the Mississippi River is about $50 per ton, and that the average value of the tonnage moving south to Saint Louis on the Mississippi River is about $8 per ton. It appears, therefore, that the total value of commodities moved east by rail and of commodities moved south by river is as follows: Value of east-bound traffic by rail, $124,717,700; value of south-bound traffic by river, $2,394,536. The total value of the commodities shipped south appears, therefore, to have been but 2 per cent. of the total value of the commodities shipped east.

These facts clearly indicate the general direction of the movements of the commerce of the States of Iowa and Minnesota, the enormous and greatly preponderating east and west traffic being the result of the construction of railroads during the last twenty years.

In this connection, the great value of the Mississippi River as a receiving and distributing reservoir for the lumber-trade is worthy of especial notice. The cost of transportation on the river is but one mill per ton per mile, or only about one-tenth of the average cost of the tonnage-movement on the railroads west of the Mississippi River, and only one-sixth of the average cost of transportation on the Pennsylvania Railroad.

The lumber-trade of the Upper Mississippi and of the Wisconsin Rivers will probably always remain a river-trade in the manner in which it is now carried on, and the growth of the distribution east, west, and south will be governed by the general growth of commerce in the different directions.

The increase of the commerce of Saint Louis with the States north and northwest of the State of Missouri must always bear a close relation to the growth of commerce between those States and the South Atlantic and Gulf States. The development of this north and south commerce will tend greatly to increase the traffic on the Mississippi River and on all north and south rail-lines, as it will be a traffic for which the east and west trunk-railway lines cannot compete. The Mississippi River will continue to be the principal avenue of transportation for lumber and other heavy commodities, on account of the cheapness of transportation, and at the same time it will constitute an invaluable regulator of freight-charges on railroads.

The fact that the navigation of the Upper Mississippi is closed during the winter months, while it affects the value of that part of the river as a commercial highway for the transportation of general merchandise, does not greatly detract from its value as a line of transport for lumber, since an adequate supply can always be moved to the river-towns during the season of navigation, and there be manufactured and shipped east and west by rail during the period when navigation is closed.

Attention is called to the interesting and valuable statements presented to this Department by Mr. C. F. Solberg, of Saint Paul, Minn.; by

Col. Milo Smith, of Clinton, Iowa, and by Mr. George H. Morgan, secretary of the Merchants' Exchange, of Saint Louis, Mo. (Appendix, pp, 92, 148, 186.)

DIRECT TRADE ON RAILROADS BETWEEN DISTANT POINTS IN THE UNITED STATES.

The direct transportation of commodities between interior points in the Western States and points in the Atlantic and Gulf States constitutes a very important feature of the internal commerce of the country at the present day. Movements of this character indicate the remarkable changes which have taken place in the course and conditions of commerce during the last fifteen years.

The direct transportation of merchandise between distant points in the United States is a result of the developed possibilities of railroad transportation in connection with the facilities for the rapid diffusion of commercial information by means of the telegraph and the public press. Such direct transportation on through consignments was not possible on railroads until through-freight lines were formed and facilities were provided for the speedy and economical transfer of freight from one railroad to another without any intermediate agencies except those provided by the common carrier. This new mode of commerce is sometimes considered to be merely a deflection of trade from the great markets, but it is rather to be regarded as a development of commerce indirectly tending to advance and not to detract from the commercial importance of the great centers of trade.

The through-freight lines of the country and the arrangements for the transfer of traffic from one road to another, by means of which direct shipments were rendered possible, are the outgrowth of a public necessity. Twenty-five years ago the agricultural products of the Western and Northwestern States were shipped to the centers of trade on the lakes and thence to New York by the lakes and the Erie Canal. Such products of the West were also shipped to towns and cities on the Ohio and Mississippi Rivers and thence to New Orleans. From these two seaports and from intermediate points on the two water-lines freights were shipped to interior points in the seaboard States. At the present time, however, but a very small proportion of the products of the West shipped to interior points in the seaboard States passes through either New York or New Orleans. Almost every interior trading town of any importance in the Atlantic and Gulf States receives supplies of grain and other produce directly from Saint Louis, Chicago, Indianapolis, Cincinnati, and Louisville, and from smaller points throughout the West.

At the present time merchandise consigned to interior points in New England is shipped direct to its destination at about the same rates as are charged to Boston. Produce is also shipped to interior points in the

State of New York at about the rates charged to New York City, and to interior points in Pennsylvania at about the rates charged to Philadelphia.

The economy of this direct mode of transportation consists mainly in the saving of time, local-freight charges from the distributing seaports, and transfer-charges.

It is impossible to present a complete statistical view of this great and growing direct trade between distant points in different parts of the United States. Characteristic data illustrative of the growth of these features of the commercial movements of the country may be found in those sections of this report which refer to the movements of grain and of cotton, to the regulating power of the water-lines, to the diversion of traffic from the water-lines, and to the development of commerce on railroads.

The hope may be here expressed that measures will be adopted for collecting such statistical and other data as will afford a clearer understanding of the important changes which have taken place in the modes of conducting the internal commerce of the country.

THE COMPARATIVE GROWTH OF COMMERCE ON RAILROADS AND ON WATER-LINES.

The commerce on the railroads of the country now far exceeds in magnitude the commerce on interior water-lines. The enormous preponderance of the traffic on railroads over the traffic on the Erie Canal and the Hudson River route in the commerce between the West and the Atlantic seaboard may be inferred from the following data, showing the tonnage moved on several of these competing lines during the year 1876:

	Tons.
New York State canals, (including the Erie Canal, the Champlain Canal, and all the lateral canals of the State)	4,172,129
Erie Railway	5,972,818
New York Central Railroad	6,803,680
Pennsylvania Railroad	9,922,911

The traffic on the New York State canals appears to have been but one-fifth of the traffic on the three trunk railroads mentioned.

In the above statement is embraced only the tonnage of the Pennsylvania Railroad lines between Philadelphia and Pittsburgh. It appears from the report for the year 1876 that the total tonnage moved on all the lines owned and controlled by that company, both east and west of Pittsburgh, amounted to 31,092,631 tons. It is proper to observe here that the facts showing the more rapid growth of commerce on railroads than on water-lines indicate both the development of commerce on railroads and the diversion of commerce from water-lines to railroads.

Competition between the northern water-line and the east and west

trunk railroads.—The diversion of grain and other products of the West from the lake and canal route to the various rail-routes connecting the West with the seaboard constitutes one of the most important features of the internal commerce of the United States. This diversion began about fifteen years ago. Its extent may be inferred from the grain-receipts at Portland, Boston, New York, Philadelphia, and Baltimore during the year 1776.

Received at—

		Bushels.
New York,	By canal and Hudson River	32,853,839
	By rail	59,047,953
Portland		3,999,181
Boston		22,753,698
Philadelphia		35,546,845
Baltimore		37,564,536
Total by rail		158,912,213

N. B.—There appears to have been about four million bushels received at New York "coastwise," which does not appear in the above table.

Almost 95 per cent. of the total receipts of grain at Boston, Philadelphia, and Baltimore, were from the Western States, a traffic in which the rail-lines compete with each other and with the water-line.

The total receipts by rail and by water (including coastwise receipts) at the five ports appear to have been:

	Bushels.
By water	32,853,839
By rail	157,912,213
Total	191,766,052

It appears that 17 per cent. of the total receipts was by the Erie Canal and Hudson River and 83 per cent. by rail. It is to be observed, however, that 13,672,732 bushels of grain received "by lake" at Buffalo were thence shipped by rail. This shows that about 24 per cent. of the shipments from the West were by lake and about 76 per cent. by rail.

It was ascertained by the Senate Committee on Transportation that the total shipments of grain from the Western States into the Atlantic seaboard amounted during the year 1872 to 178,021,426 bushels, of which 109,338,803 bushels, or 61 per cent., was shipped by rail. Comparative statistics indicate that the proportion shipped by rail has since considerably increased.

The following table indicates the amount of flour and grain delivered at New York as compared with the total quantity delivered at Montreal, Portland, Boston, Philadelphia, Baltimore, and New Orleans from 1872 to 1876, inclusive:

Year.	Delivered at New York.	Delivered at six other seaboard ports.	Total seven ports.	Per cent. at New York.	Per cent. at six other ports.
	Bushels.	*Bushels.*	*Bushels.*		
1872	89, 819, 578	94, 843, 824	184, 663, 402	48. 9	51. 1
1873	92, 137, 971	96, 952, 012	189, 089, 983	48. 7	51. 3
1874	107, 273, 156	99, 479, 950	206, 753, 106	51. 8	48. 2
1875	93, 443, 488	92, 191, 266	185, 634, 754	50. 3	49. 7
1876	97, 178, 856	127, 535, 523	224, 714, 379	43. 3	56. 7

The delivery of western grain at other ports than New York were exclusively by rail.

The diversion of the grain traffic from the northern water-line to railroads is also indicated by the following facts: Only eight years ago the principal part of the western grain consumed in the New England States was brought to New York, and was thence distributed by means of vessels sailing coastwise or by railroads to various points in the New England States. That commerce is now carried on over direct rail-lines, thus saving time and the incidental expenses of an indirect trade. This fact is clearly illustrated by the following table, presented in the report of the Massachusetts railroad commissioners for the year 1876:

Receipts of grain and flour at Boston from the West by water and by rail for eight years.

FLOUR, IN BARRELS.

	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
	Barrels.	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Barrels.*
By rail	733, 955	818, 897	995, 950	1, 052, 042	988, 491	1, 288, 429	1, 303, 851	1, 230, 137	1, 342, 191
By water	701, 727	506, 458	658, 714	569, 303	493, 258	534, 990	502, 021	395, 994	293, 066

CORN, BUSHELS.

By rail	483, 875	1, 384, 284	1, 370, 421	3, 156, 800	5, 119, 749	3, 159, 198	2, 768, 382	4, 914, 007	7, 933, 644
By water	1, 847, 159	1, 055, 676	945, 981	481, 303	320, 755	304, 867	219, 394	148, 277	66, 059

OATS, BUSHELS.

By rail	606, 033	1, 076, 675	1, 676, 108	2, 244, 086	2, 384, 699	3, 245, 016	2, 885, 812	2, 499, 631	2, 718, 574
By water	656, 037	338, 756	423, 853	179, 807	82, 767	35, 732	36, 967	196, 089	8, 596

BARLEY, BUSHELS.

By rail	197, 951	122, 713	254, 370	228, 811	238, 488	373, 656	*309, 564	*530, 396	.....
By water	64, 039	118, 173	106, 536	84, 559	85, 403	49, 655	.....	.....	.....

* Not reported in detail as to water and rail.

It appears from the foregoing table that the direct-rail receipts of flour at Boston increased from 733,955 barrels in 1868 to 1,342,191 barrels in 1876, and that the receipts by water fell from 701,727 barrels in 1868 to 293,066 barrels in 1876.

The change in the mode of transporting corn was even more marked.

The direct-rail receipts rose from 483,875 bushels in 1863 to 7,933,644 bushels in 1876, while the receipts by water fell from 1,847,159 bushels in 1868 to 66,059 bushels in 1876. The change in the mode of transporting oats and barley is also very marked.

The comparative growth of commerce on the Erie Canal and on the two competing rail-lines—the New York Central and the Erie Railroads—affords a striking illustration of the diversion of traffic from the canal.

Upon the completion of a continuous rail-line from Albany to Buffalo, the passenger traffic between these cities was at once transferred to the railroad. In 1848 the mileage of packet-boats on the canal was 542,300 miles, and in 1852 it was only 71,775 miles. The canal then ceased to be a passenger-route between the West and the East. All those commodities known as "express goods" were also very soon transferred from the canal to the railroads, and manufactured goods and the large class of freights known as "general merchandise" gradually left the canal and now constitute a part of the traffic of the railroad.

The partial diversion of the grain traffic from the canal to railroads has taken place during the last ten years, and it has been mainly the result of the direct shipment of western products from interior points to points of destination in the Atlantic States on through-freight-line cars.

Although the cost of transportation on railroads is greater than on the lakes and on the Erie Canal, yet it is found that the saving of transfer-charges and of other expenses connected with the delivery of grain at western lake ports, the transfer-charges from lake-vessels to canal-boats and again from canal-boats to railroads for distribution to points of final destination, in many cases, more than counterbalances the greater rail rate per ton per mile. This does not apply, however, to the great masses of grain sent to western lake ports for a market, and thence shipped to New York for home consumption or for exportation to foreign countries. With regard to this particular traffic, the lake and rail routes and the lake and canal route afford decided advantages over the all-rail lines.

The average value of merchandise shipped, annually, over the Erie Canal to States west of the State of New York during the five years from 1852 to 1856, inclusive, amounted to $402,779,160, but during the five years from 1871 to 1875, inclusive, the average value of merchandise thus shipped by canal amounted to only $169,927,040. At the same time there was a large increase in the value of merchandise shipped West by rail.

The diversion of traffic is also indicated by the fact that the quantity of flour moved on all the canals of the State of New York during the year 1862 amounted to 2,102,574 barrels, and during the year 1875 to only 163,287 barrels.

Competition between the Mississippi River and the railroads connecting the Western and Northwestern States with the South Atlantic and Gulf States.

There are no available statistics from which can be ascertained the relative quantity and value of commodities shipped on the Mississippi River and on railroads from the Western States into the States south of the Ohio River and south of the State of Missouri, nor of the quantity and value of commodities shipped from those Southern States into the Western and Northwestern States. The general fact that there has been a large diversion of traffic from the river to the railroads may, however, be illustrated by the statistics showing the movements of commerce at Saint Louis.

Twenty-five years ago the commerce of Saint Louis was almost exclusively confined to the Mississippi River and its navigable tributaries, and the merchants of that city hardly regarded railroads as commercial highways. The principal trade of Saint Louis was then toward the South, with New Orleans and with the cities and towns upon the Mississippi River below the mouth of the Ohio River. A great change has, however, taken place with respect to this commerce. During the year 1875 only 22 per cent. of the commerce of Saint Louis was by river, the remaining 78 per cent. having been by rail.

The facts in regard to the commercial movements to and from Saint Louis are very fully and clearly presented by Mr. George H. Morgan, secretary of the Saint Louis Merchants' Exchange, in a statement prepared for the use of this Department. (Appendix, p. 148.) From this statement the following facts in regard to the commercial movements at Saint Louis have been collated. The commerce of Saint Louis by river and by rail with sections of the country lying north, south, east, and west is indicated by the following table:

Tons of freight received at Saint Louis from the North and of freight shipped from that city to the North, by river and by rail, from 1871 *to* 1875, *inclusive.*

Year.	Received.		Shipped.		Total receipts and shipments.	
	By river.	By rail.	By river.	By rail.	By river.	By rail.
1871	382, 887	60, 793	69, 903	14, 875	452, 790	75, 668
1872	417, 954	95, 790	71, 165	13, 984	489, 119	109, 774
1873	406, 890	46, 304	73, 661	9, 551	480, 551	55, 855
1874	423, 830	107, 151	109, 540	11, 546	533, 370	118, 697
1875	352, 095	60, 993	114, 695	12, 754	466, 790	73, 747

Adding receipts to shipments, it appears that the traffic to and from the North by river increased from 452,790 tons in 1871 to 466,790 tons in 1875, and that the rail-tonnage fell from 75,668 tons in 1871 to 73,747 tons in 1875.

Tons of freight received at Saint Louis from the South and of freight shipped from that city to the South, by river and by rail, from 1871 *to* 1875, *inclusive.*

Year.	Received.		Shipped.		Total receipts and shipments.	
	By river.	By rail.	By river.	By rail.	By river.	By rail.
1871	428,935	782,539	636,151	175,634	1,065,096	958,173
1872	419,070	1,063,600	706,381	282,246	1,125,451	1,345,846
1873	355,535	1,107,228	681,885	282,593	1,037,420	1,389,821
1874	264,105	1,020,414	577,395	301,092	841,500	1,321,506
1875	281,270	1,237,205	499,300	375,716	780,570	1,612,921

Adding receipts to shipments, it appears that the traffic to and from the South by river fell from 1,065,086 tons in 1871 to 780,570 tons in 1875, and that the traffic by rail increased from 958,173 tons in 1871 to 1,612,921 tons in 1875.

Tons of freight received at Saint Louis from the East and of freight shipped from that city to the East, by rail, from 1871 *to* 1875, *inclusive.*

Year.	Received by rail.	Shipped by rail.	Total.
1871	972,482	418,440	1,390,922
1872	1,055,585	539,596	1,595,181
1873	1,319,929	561,098	1,881,027
1874	1,259,277	621,637	1,880,914
1875	1,242,066	595,673	1,837,739

Adding receipts to shipments, it appears that the traffic to and from the East (all by rail) increased from 1,390,922 tons in 1871 to 1,837,739 tons in 1875.

Tons of freight received at Saint Louis from the West, and of freight shipped from that city to the West, by river and by rail, from 1871 *to* 1875, *inclusive.*

Year.	Received by—		Shipped by—		Total by—	
	River.	Rail.	River.	Rail.	River.	Rail.
1871	72,579	484,417	44,438	350,933	117,017	835,350
1872	26,895	603,389	27,536	388,838	54,431	992,227
1873	38,630	771,717	27,810	302,174	66,440	1,073,891
1874	44,830	778,251	20,390	296,409	65,220	1,074,660
1875	30,160	692,506	25,100	317,307	55,260	1,009,813

Adding receipts to shipments, it appears that the traffic to and from the West by river fell from 117,017 tons in 1871 to 55,260 tons in 1875, and that the traffic by rail increased from 835,350 tons in 1871 to 1,009,813 tons in 1875.

The growth of commerce in each direction is indicated by the following table:

Year.	North.	East.	South.	West.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1871	528, 456	1, 390, 922	2, 023, 259	952, 367
1872	598, 893	1, 595, 181	2, 471, 297	1, 146, 658
1873	536, 406	1, 881, 027	2, 427, 941	1, 140, 331
1874	652, 067	1, 880, 914	2, 163, 006	1, 139, 880
1875	540, 537	1, 837, 739	2, 393, 491	1, 065, 073

There appears to have been an increase of commerce in each direction. The commerce toward the East, all of which was by rail, increased most rapidly.

The proportion of tonnage in each direction in 1875 was: north, 9 per cent.; east, 33 per cent.; south, 40 per cent.: west, 18 per cent.

The total tonnage of Saint Louis by river and by rail appears to have been as follows:

Year.	Tonnage.	
	By river.	By rail.
1871	1, 654, 893	3, 260, 113
1872	1, 669, 001	4, 043, 028
1873	1, 584, 411	4, 400, 594
1874	1, 440, 090	4, 395, 769
1875	1, 302, 620	4, 534, 220

The total commerce of Saint Louis by river fell from 1,654,893 tons in 1871 to 1,302,620 tons in 1875, and the total commerce by rail rose from 3,260,113 tons in 1871 to 4,534,220 tons in 1875.

It appears that during the year 1875, 22 per cent. of the commerce of Saint Louis was by river and 78 per cent. by rail. It also appears that the total commerce of the city rose from 4,915,006 tons in 1871 to 5,836,840 tons in 1875.

The rapid and enormous increase in the commerce of Saint Louis over railroads since the completion of lines to the Atlantic and Gulf States has led the merchants of that city to a high appreciation of the commercial advantages afforded by rail-transportation and to a full realization of the fact, recently stated by a trade-journal of that city, that "Trade does not come by natural advantages, but by earnest, persistent effort," such efforts having been put forth by the people of Saint Louis in securing railroad connections with every section of the country.

The following facts in regard to the changes which have taken place in the character of the traffic on the Mississippi River since the construction of railroads have been furnished by Mr. George H. Morgan, secretary of the Merchants' Exchange of Saint Louis, in reply to inquiries submitted to him by this Department:

Question. Please to state such facts as will best serve to illustrate the changes which have taken place in the passenger business between Saint Louis and States south of the mouth of the Ohio River during the last ten years.

of superior advantages of water-transportation may fall into decadence unless it also secures the aid of railway-lines affording the advantages of direct and rapid transportation to all parts of the country.

The prosperity of a commercial city does not depend upon any single advantage as to its geographical position, rail-lines, or water-lines, but upon utilizing to the fullest extent all the available facilities of transportation and of trade within its power.

THE COMPARATIVE GROWTH OF COMMERCE ON THE LAKES AND ON THE TRUNK RAILROADS CONNECTING THE WESTERN STATES WITH THE ATLANTIC SEABOARD.

The effects of competition between transportation on the lakes and on the great trunk lines are very clearly illustrated by the commercial movements at Chicago.

It is estimated that 92 *per cent. of the freights shipped east from Chicago by lake consists of breadstuffs.* Of the total shipments east from Chicago during the year 1875 there appear to have been 1,331,097 tons shipped by lake and 2,150,602 tons shipped by rail. The proportion of the principal articles shipped east from Chicago by the main trunk-railway lines during the year 1875 appears to have been as follows:

Articles.	Tons.	Per cent.
Animals and their products	886,205	41.2
Grain, flour, seeds, and feed	571,549	26.5
Lumber, shingles, lath, &c	122,224	5.6
Alcohol, high-wines, ale, and beer	20,553	1.1
All other articles	550,071	25.6
Total	2,150,602	100

It appears that about 27 per cent. of all the freight shipped by rail from Chicago to the Atlantic States consisted of cereals, and that about 41 per cent. consisted of animals and their products.

The proportion of grain shipped east from Chicago was as follows:

	Tons.
Grain shipped by lake	1,207,893
Grain shipped by rail	571,549
Total	1,779,442

The proportion of animals and their products shipped east by lake and by rail was:

	Tons.
Shipped by lake	7,601
Shipped by rail	886,205

The proportion of all other commodities besides grain and animals and their products shipped by lake and by rail was as follows:

	Tons.
Shipped by lake	115,603
Shipped by rail	692,848

The following table indicates the remarkable changes which have taken place in the transportation of wheat, wheat-flour, and corn to the East from Chicago since the year 1863:

Shipments of wheat east from Chicago.

Year.	By lake.	By rail.	Total.
	Bushels.	*Bushels.*	*Bushels.*
1863	10, 646, 552	89, 861	10, 736, 413
1864	9, 983, 567	173, 392	10, 156, 959
1865	6, 502, 575	866, 028	7, 368, 603
1866	5, 827, 846	4, 055, 303	9, 883, 149
1867	8, 492, 187	1, 899, 277	10, 391, 464
1868	8, 896, 647	1, 402, 816	10, 299, 463
1869	11, 279, 514	1, 895, 823	13, 175, 337
1870	13, 429, 069	2, 902, 953	16, 332, 022
1871	12, 120, 923	686, 576	12, 807, 499
1872	8, 831, 870	3, 122, 166	11, 954, 036
1873	15, 528, 984	8, 149, 209	23, 678, 193
1874	16, 974, 149	9, 729, 251	26, 703, 400
1875	16, 061, 054	5, 956, 619	22, 017, 673
1876	7, 396, 369	5, 378, 792	12, 775, 161

The rail-shipments increased from less than one per cent. of the total shipments in 1863, to 42 per cent. of the total shipments in 1876. In view of the fluctuations in the aggregate shipments from year to year, the general tendency of traffic may be better illustrated by comparing the shipments during the first five years with the shipments during the last five years of the period mentioned.

The rail-shipments during the first and second periods of five years were as follows:

	Bushels.
From 1863 to 1867	7, 083, 861
From 1872 to 1876	32, 336, 037
This shows an increase of	25, 252, 176

Or 356 per cent.

The lake-shipments during the first and second periods of five years were as follows:

	Bushels.
From 1863 to 1867	41, 452, 727
From 1872 to 1876	64, 792, 526
This shows an increase of	23, 339, 799

Or 56 per cent.

It will be observed from the table that the rail-shipments have increased more rapidly during the last four years than ever before.

The following table furnishes data similar to the foregoing in regard to the movements of flour from Chicago by lake and by rail:

Shipments of flour east from Chicago.

Years.	By lake.	By rail.	Total.
	Barrels.	*Barrels.*	*Barrels.*
1863	1,207,345	311,884	1,519,229
1864	1,034,793	249,417	1,284,210
1865	646,356	646,372	1,292,728
1866	481,491	1,499,816	1,981,307
1867	650,367	1,364,576	2,014,943
1868	774,565	1,624,500	2,399,065
1869	829,872	1,508,855	2,338,121
1870	574,393	1,129,074	1,703,467
1871	488,705	797,085	1,285,790
1872	223,457	1,136,670	1,360,127
1873	428,321	1,773,467	2,201,788
1874	555,159	1,672,037	2,227,189
1875	328,283	1,872,913	2,201,196
1876	236,591	2,309,530	2,545,121

The diversion of flour from the lakes to the railroads has been much more marked than that of wheat. It appears from the foregoing table that the shipments of flour from Chicago *by lake* during the year 1876 were only about one-sixth of the shipments by lake during the year 1863, but that the shipments *by rail* during the year 1876 were about eight times the shipments by rail during the year 1863. This diversion of trade from the lakes to the railroads has been more rapid during the last four or five years than ever before.

The following table furnishes similar data in regard to the movements of corn at Chicago.

Shipments of corn east from Chicago.

Years.	By lake.	By rail.	Total.
	Bushels.	*Bushels.*	*Bushels.*
1863	24,749,400	303,050	25,051,450
1864	11,993,475	193,217	12,186,692
1865	24,421,600	902,369	25,323,969
1866	31,257,855	1,369,771	32,627,626
1867	19,940,172	1,285,428	21,225,600
1868	21,671,071	2,978,388	24,649,459
1869	17,019,940	4,501,481	21,520,421
1870	13,598,387	4,108,942	17,707,329
1871	34,200,876	2,515,154	36,716,030
1872	41,589,508	5,424,044	47,013,552
1873	34,487,205	2,194,361	36,681,566
1874	30,242,311	2,364,833	32,607,144
1875	21,850,652	4,321,559	26,172,211
1876	28,104,265	17,299,232	45,403,497

It will be seen from this table that the shipment of corn by lake has not exhibited any marked decrease. There has, however, been a very large increase in the shipments by rail. It appears that during the year 1876 the shipments by rail were fifty-seven times greater than during the year 1863.

Corn being a commodity of lower value than either wheat or wheat-flour, and being chiefly moved in large quantities under one consignment, the principal part of it is still shipped on the cheap water-line.

As navigation on the lakes is limited to about seven months of the year, it is a matter of interest to note the amount of wheat and corn

shipped by rail during the period when navigation is open and during the period when navigation is closed.

The following table gives the amount of wheat and corn shipped from Chicago by lake and by rail during each month of the year 1876:

Shipments of wheat and corn from Chicago by lake and by rail during each month of the year 1876.

Month.	Shipments from Chicago.			
	Wheat.		Corn.	
	By lake.	By rail.	By lake.	By rail.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*
January	.....	271, 734	600	935, 655
February	.....	397, 877	392	1, 493, 271
March	.....	541, 116	1, 200	1, 181, 799
April	453, 078	852, 572	1, 299, 147	1, 091, 802
May	1, 851, 114	1, 062, 670	1, 531, 181	2, 824, 390
June	1, 095, 539	921, 660	4, 722, 118	2, 864, 494
July	609, 119	382, 291	3, 455, 059	992, 191
August	478, 630	322, 874	5, 491, 006	1, 257, 840
September	883, 041	343, 556	5, 279, 194	1, 516, 268
October	1, 872, 799	446, 742	4, 409, 953	1, 179, 362
November	758, 649	864, 486	1, 914, 485	977, 881
December	400	647, 983	.....	1, 206, 887
Total	7, 396, 369	6, 765, 581	28, 104, 265	17, 524, 770

The *average* monthly shipments of wheat *by rail* during the five months when navigation was closed were 542,256 bushels, and during the seven months when navigation was open, 620,614 bushels. The *average* shipments of corn *by rail* during the five months when navigation was closed were 1,182,283 bushels, and during the seven months when navigation was open, 1,659,051 bushels.

In order that the general facts indicated by these statistics may be clearly appreciated, they have been represented on certain charts which may be found at the end of this report.

Lake and rail lines are formed by combinations between steamer-lines on the lakes and the Philadelphia and Erie Railroad at Erie, Pa., and the New York Central and Hudson River Railroad, and the Erie Railway, at Buffalo.

Chart No. 2, at the end of this report, represents the monthly shipments of wheat from Chicago by lake and by rail from 1869 to 1876, inclusive.

Chart No. 3 represents the monthly shipments of corn from Chicago by lake and by rail from 1869 to 1876, inclusive.

Very important changes have taken place in the transportation interests of the lakes during the last six years.

The tonnage of vessels employed has been very greatly increased. Vessels of three or four times the carrying capacity of those formerly built are now employed in lake commerce.

Within the same period also several steamer-lines have been established which run in connection with the New York Central, the Erie,

and the Philadelphia and Erie Railroads. The economical transportation of grain on a railroad requires regularity of movement, and therefore it was found to be necessary to establish steamer-lines in order to secure proper lake connections for the roads.

Another very important improvement in lake-transportation which has tended greatly to reduce freight-charges is the employment of steamers having one or more barges in tow. The amount of tonnage thus employed is gradually increasing. The average freight-charges from Chicago to New York by the three modes of transportation are shown in the following table:

Average monthly freight-charges per bushel on wheat from Chicago to New York by water, (lakes, Erie Canal, and Hudson River,) by lake and rail, (lake to Buffalo, and thence rail to New York,) and by all rail, from 1872 to 1876, inclusive.

Months.	1872.			1873.			1874.			1875.			1876.		
	All water.	Lake and rail.	All rail.	All water.	Lake and rail.	All rail.	All water.	Lake and rail.	All rail.	All water.	Lake and rail.	All rail.	All water.	Lake and rail.	All rail.
	Cts.	Cts	Cts	Cts.	Cts	Cts.	Cts.	Cts	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
January	....	....	39	....	....	39	....	....	36	....	....	24	....	....	27
February	....	....	39	....	....	39	....	....	33	....	....	24	....	....	27
March	....	....	36	....	....	39	....	....	33	....	....	24	....	....	24
April	....	....	30	....	....	36	....	....	27	....	....	24	....	....	22
May	18	25	27	19	25	31	16	20	27	13	14	24	10	11	12
June	21	23	27	18	22	27	15	18	27	10	12	24	9	11	12
July	23	23	27	17	22	27	13	17	27	10	12	24	8	11	12
August	22	23	27	17	21	27	11	16	27	11	12	24	8	10	12
September	27	32	33	25	30	31	12	17	27	9	12	24	9	11	12
October	31	37	39	21	28	33	13	16	27	11	14	23	12	13	12
November	28	28	39	20	26	33	13	17	27	13	20	24	13	15	12
December	....	....	39	....	....	36	....	....	27	....	19	28	....	....	12
Average	24	27	33	19	24	33	13	17	28	11	14	24	10	12	17

The facts indicated by the foregoing table are represented on statistical chart No. 1 at the end of this report. The general fact is clearly indicated upon this chart, that rail-rates are very much advanced at about the time of the close of navigation, and that they are correspondingly lowered, at or about the time when navigation opens in the spring, thus proving the regulating power of the water-line.

For several months during the years 1875 and 1876 the railroads were engaged in a war of rates, and the actual charges were oftentimes much below the published rates.

COMPARATIVE GROWTH OF COMMERCE ON THE ERIE CANAL AND ON THE TRUNK RAILROADS OF THE STATE OF NEW YORK.

For several years the New York Central and Hudson River Railroad and the Erie Railway have been active competitors of the Erie Canal for the commerce between the Western States and the States on the Atlantic seaboard. This competition has undoubtedly been greatly stimulated by the competition of rival roads to other seaports than New

York, namely, the Grand Trunk Railway to Montreal and Portland, Me., the Pennsylvania Railroad to Philadelphia and Baltimore, and the Baltimore and Ohio Railroad to Baltimore.

In order to appreciate the nature of the competition between the Erie Canal and the two trunk railroads of the State of New York, it is necessary to take notice of the circumstances which control shipments east from Buffalo by the several lines. The eastward traffic on the Erie Canal is now, and has been for several years confined mainly to grain and other heavy products of the West received *by lake* at Buffalo.

The railroads connecting Buffalo with the Western States bring very little traffic to the canal. Probably there is not shipped from Buffalo *by canal*, more than 3 per cent. of all the freights received by rail at that point.

The two great trunk railroads which compete with the canal at Buffalo possess, however, very great advantages, from the fact that they have both rail and lake connections with the West. Steamer-lines plying on the lakes bring to these roads a large amount of traffic from Chicago and from other lake ports. Their rail connections, viz: the Great Western Railway, the Grand Trunk Railway, the Canada Southern Railway, and the Lake Shore and Michigan Southern Railway, also bring to them traffic from all parts of the West.

The eastern and lateral rail connections of the two New York trunk roads also afford to them great advantages for through traffic to and from Atlantic seaports and interior points in the seaboard States.

The New York Central and the Erie Railroads have been enabled to secure an enormous traffic by means of these rail and water connections and branch lines. This has led to a great reduction in the actual cost of moving freights by rail between the lakes and the seaboard;—the volume of traffic being the most important condition toward securing cheap transportation. So long as the cereal products of the West were marketed almost exclusively at Chicago, Milwaukee, and other lake ports, the Erie Canal was the principal avenue of transport; but after the great trunk roads formed direct rail-connections throughout the Western and Northwestern States, they were enabled to divert a large amount of traffic from the water-line. The commerce developed as a result of the construction of these railroads far exceeds the amount of traffic which may have been diverted from the water-line to the railroads, and it is generally true throughout the country that the traffic secured by railroads has been to a much greater extent developed by them, than it has been diverted from other transportation-lines. Notwithstanding the fact that the rail-rates have been considerably higher than the lake and canal rates, the railroads have been enabled, by means of direct shipments, to effect such saving of commissions, transfer-charges, warehousing, &c., incident to transportation by the water-line, as to become active competitors for the transportation of grain and other heavy products of the West.

The reduction in the cost of rail-transportation in consequence of im-

provements in the construction and equipments of railroads, the use of steel rails, and the advantages realized from the more advanced condition of railroad management, has led to a very large increase in the movements of commerce by rail.

The following table, from the report of the auditor of the State of New York, indicates the growth of traffic on the two New York trunk lines and on the New York canals from 1857 to 1876, inclusive.

Number of tons transported on the New York State canals and on the New York Central and Erie Railroads, 1857 to 1876.

Year.	Erie Railway.	New York Central Railway.	Total on the two railroads.	New York State canals.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1857	978,066	838,791	1,816,857	3,344,061
1858	816,965	765,407	1,582,372	3,665,192
1859	869,072	834,319	1,703,391	3,781,684
1860	1,139,554	1,028,183	2,167,737	4,650,214
1861	1,253,419	1,167,302	2,420,721	4,507,635
1862	1,632,955	1,387,433	3,020,388	5,598,785
1863	1,815,096	1,449,604	3,264,700	5,557,692
1864	2,170,798	1,557,148	3,727,946	4,852,941
1865	2,234,350	1,275,299	3,509,649	4,729,654
1866	3,242,792	1,602,197	4,844,989	5,775,220
Ten years	16,153,067	11,905,683	28,058,750	46,463,078
1867	3,484,546	1,667,926	5,152,472	5,688,325
1868	3,908,243	1,846,599	5,754,842	6,442,225
1869	4,312,209	2,281,885	6,594,094	5,859,080
1870	4,852,505	4,122,000	8,974,505	6,173,769
1871	4,844,208	4,532,056	9,376,264	6,467,888
1872	5,564,274	4,393,965	9,958,239	6,673,370
1873	6,312,702	5,522,724	11,835,426	6,364,782
1874	6,364,276	6,114,678	12,478,954	5,804,588
1875	6,239,946	6,001,954	12,241,900	4,859,858
1876	5,972,818	6,803,680	12,776,498	4,172,129
Total ten years	51,850,727	43,287,467	95,138,194	58,506,014

This table indicates the comparative total traffic of the three lines. The traffic of the canals during the year 1876 appears to have been only 25 per cent. in excess of their traffic during the year 1857. The railroad traffic, however, increased from 1,816,857 tons in 1857 to 12,776,498 tons in 1876, an increase of 603 per cent.

During the first period of ten years the tonnage transported on the canals exceeded the tonnage on the two railroads by 18,404,328 tons. But during the latter period the tonnage transported on the railroads exceeded the tonnage on the canals by 36,637,180 tons.

The following table exhibits the average freight-charges per ton on all classes of commodities from 1857 to 1876, inclusive. This table is taken from the report of the auditor of the State of New York.

Cost of transportation per ton per mile on New York State canals and on the New York Central and Erie Railroads, 1857 to 1876.

Year.	Rate per ton per mile.		
	New York Central Railway.	Erie Railway.	New York State canals.
	Cents.	*Cents.*	*Cents.*
1857	3.13	2.45	.80
1858	2.59	3.32	.80
1859	2.13	2.17	.67
1860	2.06	1.84	.99
1861	1.96	1.73	1.08
1862	2.22	1.89	.96
1863	2.40	2.09	.88
1864	2.75	2.31	1.15
1865	2.31	2.76	1.10
1866	2.92	2.45	1.09
1867	2.53	2.04	.90
1868	2.59	1.92	.88
1869	2.20	1.60	.92
1870	1.86	1.37	.83
1871	1.65	1.47	1.02
1872	1.69	1.52	1.02
1873	1.57	1.45	.88
1874	1.47	1.31	.73
1875	1.27	1.21	.66
1876	1.05	1.07	.68

It appears from this statement that the cost of transportation on the canals has always been and is still less than the cost of transportation on the railroads. It will be observed, however, that while the cost of transportation on the canals has for a number of years remained very nearly stationary, the cost of transportation on the two railroads has been very greatly reduced. A similar reduction in the cost of transportation has taken place during the last ten years on all the other trunk lines of the country.

The following table shows the average monthly freight-charges for transporting wheat from Buffalo to New York City during the last two years:

Average rates per bushel for the transportation of wheat by canal and by rail from Buffalo to New York during each month of 1875 *and* 1876.

Months.	1875.		1876.	
	By rail.	By canal.	By rail.	By canal.
	Cents.	*Cents.*	*Cents.*	*Cents.*
May	8.5	7.5	7.5	6.8
June	7.0	6.9	6.3	6.3
July	7.5	7.5	6.0	6.0
August	8.2	8.2	6.0	5.8
September	7.0	7.0	6.0	6.1
October	8.2	8.1	6.8	8.0
November	11.0	10.6	8.5	7.3
Average	8.2	7.9	6.8	6.6

The great reductions which have been made both in rail and canal rates may be seen by comparing the above average rates with the average rates which prevailed during the years 1871 and 1872, as shown in the following table:

Average rates for the transportation of wheat from Buffalo to New York during each month of the years 1871 *and* 1872.

Months.	1871.		1872.	
	By rail.	By canal.	By rail.	By canal.
	Cents.	*Cents.*	*Cents.*	*Cents.*
May	18	11.6	18	13
June	18	10.2	18	12.3
July	18	11.1	15.6	11.5
August	18	11.7	15	12.2
September	18	13.6	17.1	12.3
October	18	13.9	19.4	14.5
November	21	16.1	21	16
Average	18.4	12.6	18	13.1

It appears that the average charges for transporting wheat from Buffalo to New York *by rail* fell from 18.4 cents per bushel in 1871 to 6.8 cents per bushel in 1876, and that the average charges for transporting wheat from Buffalo to New York *by canal* fell from 12.6 cents in 1871 to 6.6 cents in 1876.

During the year 1876 wheat was at times shipped by rail from Buffalo to New York at 6 cents per bushel, being less by one-quarter of a cent per bushel than the tolls paid to the State prior to 1870 for the mere privilege of passing through the canal.

The extent of the diversion of grain from the canals to the railroads may be inferred from the following table showing the amount of grain received at New York by the Erie and Champlain Canals and by rail during the last five years:

Receipts at New York by the Erie and Champlain Canals compared with the receipts by rail.

Year.	Total receipts by rail and river.	Delivered at tide-water by Erie and Champlain Canals.	Rail receipts.	Per cent. received by canal.
	Bushels.	*Bushels.*	*Bushels.*	
1872	89, 819, 578	53, 653, 295	36, 164, 283	60
1873	92, 137, 971	48, 108, 151	44, 029, 820	52
1874	107, 273, 156	50, 705, 147	56, 568, 009	47
1875	93, 443, 488	38, 673, 342	54, 770, 146	41
1876	95, 949, 242	32, 853, 839	63, 095, 402	34

The rail-receipts at New York embrace the receipts by the New York Central Railroad, the Erie Railway, and the Pennsylvania Railroad. The proportion of canal-receipts at New York fell from 60 per cent. in 1872 to 34 per cent. in 1876, a relative decline of nearly one-half. The rail receipts increased from 36,164,283 bushels in 1872 to 63,095,402

bushels in 1876, an increase of about 80 per cent. This table also affords an illustration of the results of competition between the railroads and the lakes, as well as of competition between the railroads and the canals.

The following table indicates the receipts of grain at tide-water by the Erie and Champlain Canals in comparison with the total receipts of grain at the seven principal seaports, viz, Montreal, Portland, Boston, New York, Philadelphia, Baltimore, and New Orleans:

Receipts of grain at tide-water by the Erie and Champlain Canals compared with the deliveries at the seven principal seaboard ports for four years.

Years.	Seven seaboard ports.	Tide-water, Erie, and Champlain Canals.	Received at seaports in excess of canal-receipts.
	Bushels.	*Bushels.*	*Bushels.*
1872	184, 663, 402	53, 653, 295	131, 010, 107
1873	189, 089, 983	48, 108, 151	140, 981, 832
1874	206, 753, 106	50, 705, 147	156, 047, 959
1875	185, 634, 754	38, 673, 342	146, 961, 412
1876	224, 714, 379	32, 853, 639	191, 860, 540

This table shows a decrease of 20,799,456 bushels in the receipts at tide-water by the Erie and the Champlain Canals from 1872 to 1876. The receipts by rail at the various seaports, however, showed an increase of 60,850,433 bushels during the same period.

This subject is farther treated of in the section of this report in regard to competition and to the growth of traffic on rail and on water lines.

SHIPMENT OF GRAIN FROM THE WESTERN STATES TO MONTREAL AND TO NEW YORK CITY.

The Canadian system of canals connecting Lake Erie with the Saint Lawrence River at Montreal was completed in the year 1848. The commerce of the Western and Northwestern States was then opened to the markets of that city, and an active competition has ever since existed between New York and Montreal for the control of the commerce between our Western States and the countries of Europe.

This competition relates especially to the grain-trade, but it naturally embraces to some extent all classes of commodities exported and imported.

Until within a few years this competition was confined almost exclusively to the two rival water-lines, namely, the line formed by the Lakes, the Canadian canals, and the Saint Lawrence River to Montreal, and the line formed by the lakes, the Erie Canal, and the Hudson River to New York. At the present time, however, the trunk railroads extending from these two seaports to the West, constitute important commercial highways, over which the competition for western trade is quite as active as on the two water-lines. It is important in this connection

to note the fact that the competition between New York and Montreal is confined almost exclusively to the transportation of the products of the West *to Europe*, and that the city of Montreal does not compete with the city of New York or with any other seaport city of the United States for the enormous commerce between the Western States and the States of the Atlantic seaboard, a commerce largely exceeding the commerce between the Western States and Europe. This may be inferred from the fact that during the year 1872 there was shipped east 178,000,000 bushels of grain, of which only 63,000,000 bushels, or 35 per cent., was shipped to Europe, constituting the entire amount for which the Montreal route entered into competition with the routes in the United States.

The competition of rail-lines for western trade began at New York about the year 1856, but it was not until the year 1867 that grain was first shipped by rail from the West to Montreal.

Wheat, wheat-flour, and corn are the only cereal products of the West which are exported from the United States by the way of Montreal in any considerable quantities. The following table presents the receipts of wheat, wheat-flour, and corn at Montreal from 1870 to 1875, inclusive:

Year.	By water.	By rail.	Total.
	Bushels.	*Bushels.*	*Bushels.*
1870	9,137,213	2,605,267	11,742,480
1871	12,202,431	3,573,897	15,776,328
1872	13,361,235	3,565,359	16,926,594
1873	14,918,419	4,068,050	18,986,369
1874	11,618,495	4,053,348	15,671,843
1875	10,496,017	5,040,986	15,537,103

The total exports of wheat at Montreal are about equal to the receipts of wheat at that port from the United States, and all the corn received and shipped is exclusively of American growth. It may, therefore, be assumed that almost all the American wheat and corn transported via the Saint Lawrence route is intended for exportation beyond Canada. Nearly all the grain exported from Montreal is shipped to Europe, and chiefly to ports in Great Britain.

The distances from Montreal and from the seven principal seaports of the United States to Liverpool are as follows:

American ports.	Distance to Liverpool.
	Naut. miles.
Montreal, { Via Straits of Belle Isle, (the usual route)	2,766
Montreal, { Via route south of Newfoundland	2,936
Portland	2,770
Boston	2,930
New York	3,075
Philadelphia	3,260
Baltimore	3,400
New Orleans	4,766
San Francisco	14,400

These distances were furnished by the United States Coast Survey, and are stated in nautical miles. The distance from New York to San Francisco is 13,900. The difference in distance between Montreal and Europe and between the several Atlantic seaports and Europe is not in a commercial sense a consideration of much value. There are, however, other conditions involved in the competition for trade between the West and Europe which are of much greater importance. The cost of transporting a given commodity a distance of 100 miles between certain points may in other instances be greater than the cost of transporting it 1,000 miles. The most important condition determining the average freight-charges to or from any port is usually the *magnitude of the total commerce of that port.* The relative volume of the maritime commerce of seaports is approximately indicated by the tonnage entered.

The striking commercial advantages enjoyed in this respect by New York in comparison with Montreal are shown by the following table, showing the tonnage entered at New York and at Montreal during each year from 1860 to 1875, inclusive:

Tonnage entered.

Year.	At New York.	At Montreal.	Year.	At New York.	At Montreal.
	Tons.	*Tons.*		*Tons.*	*Tons.*
1860	1,973,812	118,216	1868	2,865,252	186,104
1861	2,320,927	248,351	1869	3,101,691	251,557
1862	2,509,749	259,901	1870	3,093,186	306,065
1863	2,554,858	195,809	1871	3,413,436	344,323
1864	2,382,192	142,046	1872	3,969,339	391,946
1865	2,075,477	134,758	1873	4,211,624	412,478
1866	2,697,325	189,280	1874	5,049,618	423,423
1867	2,754,005	185,354	1875	4,421,074	642,386

The increase of tonnage entered since the year 1860 has been, at New York, 2,447,262 tons; at Montreal, 524,170 tons. The port of New York enjoys the advantages of a very large trade with the West Indies and with the countries of South America, as well as with all other commercial countries of the globe, and the enormous supply of tonnage almost always affords facilities of transport for any demand which may arise for the exportation of grain or other western products to foreign countries. The available supply of tonnage at Montreal is, on the other hand, quite limited.

The principal article of exportation at Montreal is grain, and this commodity gives employment in the outward voyage of vessels to more than half the available tonnage at that port. No port can, however, increase its grain-trade very much out of proportion to its general business, as any attempt to do so would merely enhance the cost of ocean freights and thus throw the advantage upon the side of a rival port. Or, to express this fact in other words, the rates which can be obtained for the transportation of grain from Montreal to Liverpool are not sufficient to pay the expenses of the round voyage of a vessel to and from

that port, and, therefore, the grain-trade depends upon the essential condition of an import-trade which shall pay a part of the expense of the round voyage. This condition is met in a much greater degree at New York than at Montreal.

In view of these facts and of the exceedingly low cost of transportation per ton per mile upon the ocean, it oftentimes occurs that grain can be transported from New York and from other Atlantic seaports cheaper than from Montreal, notwithstanding the fact that the distance from the Atlantic seaports of the United States is greater than by the usual route from Montreal to Liverpool.

The Canadian route is subject to several disadvantages.

First. The commerce of Montreal is entirely suspended by ice during five months of the year, whereas the harbor of New York is never closed.

Second. During several weeks of the period when the navigation of the Saint Lawrence River is open, that route to the ocean is subject to dangers and difficulties in consequence of fogs and floating ice. These disadvantages of the Canadian route are a serious impediment to ocean commerce, from the fact that Montreal is situated 986 miles from the ocean by way of the straits of Belle Isle. The city of New York is, on the other hand, situated within a few miles of the ocean, and is accessible at all seasons of the year. The rates of insurance on vessels and on cargoes by the Montreal route are of course very much advanced during those periods when the dangers of navigation are greatest.

Third. The distance from Montreal to foreign countries other than those of Europe is very much greater than the distance from the Atlantic seaports of the United States. About 15 per cent. of the grain exported from the United States is shipped to the West Indies and to South American ports. The Canadian route is not to any considerable extent a competitor for this trade, from the fact that the distance from Montreal is about *fourteen hundred miles greater than from New York.*

A *fourth* limitation to the grain-trade of Montreal arises from the fact that when grain is shipped to that city from the Western States it cannot be distributed to points in the New England States or other States of the Atlantic seaboard except upon payment of duty. This operates practically as an inhibition upon such trade, as appears from the following statement, showing the duties on all grains imported into the United States under our present tariff laws:

GRAIN IMPORTED.

	Customs-duties.
Wheat	20 cents per bushel.
Wheat-flour	20 per cent. ad valorem.
Corn	10 cents per bushel.
Corn-meal	10 per cent. ad valorem.
Rye	15 cents per bushel.
Rye-flour	10 per cent. ad valorem.
Oats	10 cents per bushel.
Barley	1 cent per pound.
Barley, pulverized	20 per cent. ad valorem.

The disadvantages experienced by the port of Montreal on account of this impediment to trade are thus stated by the Hon. Hugh McLellan, president of the Montreal Board of Trade, in a letter addressed to the chairman of the United States Senate Committee on Transportation, dated November 1, 1873:

The privilege of selling grain or flour, the products of the Western States, to New England without hinderance or charge would, even with our present canal facilities, enable us to import largely from the West not only to obtain that additional trade, but with that as an alternative for surplus, our export-trade by sea would assume larger proportions. The vessel owned or chartered now acts with caution, fearing that the tonnage may exceed the volume of freight offering. The grain operator if he now orders in excess of tonnage has no alternative but to store until relieved by additional arrival of vessels.

The trunk railroads of Canada, namely, the Grand Trunk, the Great Western, and the Canada Southern Railroads, are not, however, so much restricted in regard to their traffic as the city of Montreal is with respect to its trade. Under the laws and regulations of the United States touching what is known as the "transit trade," products of the United States may be transported from one point in the United States through the Dominion of Canada to another point in the United States in sealed cars without the payment of duty. This privilege has been granted by the United States to the Canadian railroads in the belief that the advantages afforded the people of this country, through the competition of the Canadian routes, are sufficient to warrant the extension of the privileges of the "transit trade." The people of Canada are also allowed to transport freight across the territory of the United States without the payment of duty. This transit-trade is more fully treated of in another part of this report.

The following tables indicate the relative grain trade of New York and Montreal for several years:

Year.	Western grain received at New York.	Western grain received at Montreal.
	Bushels.	*Bushels.*
1863	65, 320, 158	6, 151, 521
1864	53, 323, 903	6, 289, 824
1865	52, 918, 983	5, 388, 291
1866	55, 289, 763	4, 541, 892
1867	47, 484, 262	4, 928, 830
1868	58, 125, 725	4, 980, 709
1869	62, 174, 663	10, 050, 651
1870	65, 781, 264	10, 368, 899
1871	86, 131, 705	14, 641, 630
1872	87, 381, 040	15, 213, 029
1873*	92, 137, 971	19, 713, 529
1874*	107, 273, 156	16, 875, 728
1875*	93, 443, 488	17, 073, 018
1876*	95, 949, 242	18, 969, 918

* For calendar year.

During the first five years of this period the receipts at Montreal and New York were as follows:

	Bushels.
Received at New York	274,337,069
Received at Montreal	27,300,358
Total	301,637,427

Of the total receipts at the two cities during the period just referred to, 90 per cent. was received at New York and 10 per cent at Montreal.

During the last five years mentioned in the above table, the receipts at Montreal and New York were as follows:

	Bushels.
Received at New York	476,184,897
Received at Montreal	87,845,222
Total	564,030,119

Of the total quantity received at the two cities, 83 per cent. was received at New York and 17 per cent. at Montreal.

The relative receipts of wheat, wheat-flour, and corn at Montreal by the Grand Trunk Railroad and by the Saint Lawrence River during the year 1875 are shown in the following statement:

Grain.	Received by Grand Trunk Railroad.	Received by the St. Lawrence River.
Wheat ..... bushels..	1,158,051	7,457,187
Wheat-flour ..... do.....	3,843,525	1,274,230
Corn ..... do.....	39,410	1,764,600
Total	5,040,986	10,496,017

The relative quantities of wheat, wheat-flour, and corn exported from Montreal and from New York to foreign countries are shown by the following table:

Year.	Exported—		Year.	Exported—	
	From New York.	From Montreal.		From New York.	From Montreal.
	Bushels.	*Bushels.*		*Bushels.*	*Bushels.*
1856	16,492,538	1,817,690	1867	14,240,247	4,818,830
1857	21,011,750	1,965,397	1868	19,579,536	4,940,709
1858	10,706,396	1,574,047	1869	17,224,452	10,950,651
1859	6,263,722	537,898	1870	29,011,391	10,368,899
1860	8,803,327	2,918,647	1871	31,941,546	14,641,630
1861	40,189,883	9,758,580	1872	41,341,341	15,113,029
1862	56,943,942	10,963,988	1873*	54,278,072	16,228,772
1863	49,567,522	7,151,521	1874*	66,088,650	14,580,934
1864	30,018,158	6,289,824	1875*	50,686,401	11,667,817
1865	13,864,147	4,389,291	1876*	55,500,158	15,847,439
1866	No data.	4,541,892			

* For calendar year.

It appears that during the first five years of this period there were exported from New York 63,277,733 bushels, and from Montreal 8,813,679

bushels, and that during the last five years there were exported from New York 267,894,622 bushels, and from Montreal 73,437,991 bushels. During the first period, 88 *per cent.* of the total exports at the two ports was from New York, and 12 *per cent.* from Montreal, while during the last period 78 *per cent. was from New York* and 22 *per cent. from Montreal.* Comparing the exports at each of the two ports during the periods of five years mentioned, it appears, however, that the increased exports at New York amounted to 204,616,890 bushels and the increased exports at Montreal to only 64,624,312 bushels.

THE UNITED STATES AND CANADIAN TRANSIT TRADE.

There are certain rail and water lines in the Dominion of Canada which form connecting-links between transportation-lines in the United States, and there are certain transportation-lines in the United States which form, either in whole or in part, the most direct or the only practicable routes of commerce between different parts of the Dominion of Canada. There are also other lines in the United States which afford to the Dominon of Canada the means of access to seaports and thence to foreign countries. By reference to Map No. 3, it will be seen that the Grand Trunk Railway through Canada affords the means of direct transportation between points in all parts of the New England States and our Western and Northwestern States. The line of this road extends across the States of Vermont, New Hampshire, and Maine to Portland. By means of a through-freight-line combination, the Vermont Central Railway organization, with its numerous branch lines extending to all parts of New England, is closely allied in the interests of traffic with the Grand Trunk Railroad. By reference to Maps Nos. 1, 3, and 4, it will also be seen that the railway-lines crossing that part of the upper peninsula of Canada lying between the States of New York and Michigan form connecting-links between the great trunk lines of the State of New York and lines extending from the Detroit River to Chicago, to Saint Louis, and to all important points in the West.

The Welland Canal, owned and controlled by the Dominion of Canada, and forming the connecting-link of navigation between Lakes Erie and Ontario, is an essential part of the water-line between the ports of the United States on the upper lakes and ports in the State of New York on Lake Ontario and the Saint Lawrence River.

These are the principal Canadian lines which subserve the interests of commerce between points in the United States.

The principal lines in the United States which form important highways of commerce for the people of the Dominion of Canada are the following:

First. The railway-line through the States of Maine, New Hampshire, and Vermont, forming a connection between the railroads of Nova Scotia and New Brunswick and the railroads of the province of Quebec.

Second. The routes from Chicago and from Du Luth to the province of Manitoba, forming connecting-links in the highways of commerce between that province and the provinces of Ontario and Quebec.

Third. That portion of the Grand Trunk Railway crossing the States of New Hampshire and Maine, the Vermont Central Railway, and the several rail-lines and the Hudson River and Champlain Canal route, forming highways of commerce between the Dominion of Canada and foreign countries, and constituting the cities of Portland, Boston, and New York seaports for the foreign commerce of Canada with countries beyond the United States, especially during the six months of the year when the navigation of the Saint Lawrence route is closed.

An appreciation of the mutual interests of transportation which have sprung up in consequence of the opening of these various highways of commerce has naturally led to that reciprocity of facilities commonly known as "the transit trade."

The commercial intercourse between the United States and Canada over these various highways of commerce is the subject of treaty relations between the government of Great Britain and the government of the United States. These treaty stipulations embrace the privilege accorded to the people of Canada of transporting merchandise through the territory of the United States, and the privilege accorded to the citizens of the United States of transporting dutiable merchandise through the Dominion of Canada, under customs locks and seals, accompanied by customs manifest without payment of duty or the inspections incident to customs regulations. The ports from which and to which and the routes over which merchandise may be transported under these reciprocal relations of traffic are set forth in the regulations of the Treasury Department of the United States. The following are the routes for the transportation of American merchandise through Canada:

First. The Grand Trunk Railroad from Port Huron, in Michigan, to Buffalo, Niagara Falls, Ogdensburgh, N. Y., Saint Albans, Vt., and Island Pond, near the northern boundary of the State of Vermont.

Second. The Great Western Railroad of Canada, from Detroit and Sarnia to Suspension Bridge and Buffalo.

Third. The Canada Southern Railroad from Trenton, a point near the city of Detroit, to Buffalo, New York.

Fourth. The Saint Lawrence River and the Canadian canals.

The prescribed routes for the transportation of Canadian merchandise across the territory of the United States are:

First. The railroad-lines extending from Portland and Boston to Canada.

Second. The rail and water lines from the city of New York to the Dominion of Canada.

Third. The overland route from the head of Lake Michigan, across the territory of Minnesota into the British province of Manitoba.

Fourth. The rail-line from the province of New Brunswick, across the States of Maine, New Hampshire, and Vermont, to the Canadian boundary line near Island Pond.

Thus far the reciprocity of transportation facilities has been in a very high degree beneficial to both countries. The question as to which country has realized the greater advantages from the arrangement is not, therefore, one of any practical moment. Commercial intercourse has been stimulated and the transportation-routes of both countries have realized great advantages from the additional traffic secured. Important advantages have been realized by shippers in the United States through the competition afforded by the several Canadian lines, and the facilities afforded by these lines are highly appreciated by the citizens of the United States.

Statistics showing the quantity and value of the commodities shipped in the transit trade have been annually published since 1870. The following statement, compiled from the annual report of commerce and navigation, shows the value of commodities shipped by the people of Canada through the territory of the United States:

	Value of commodities.
1870	$23,191,860
1871	25,375,037
1872	31,385,320
1873	40,099,185
1874	38,850,676
1875	40,686,283
1876	42,062,655

No plan has yet been adopted for the collection of statistics showing either the quantity or the value of commodities shipped through the territory of Canada by citizens of the United States, owing to the fact that it is deemed to be a part of our internal commerce, and that the Government of the United States has heretofore neglected to adopt any measures for collecting information upon this subject. This traffic greatly exceeds the value of commodities shipped by the people of Canada through the territory of the United States.

The intimate connection between the transportation-lines of Canada and of the United States has tended very greatly to increase commercial intercourse between the two countries, and it appears to be a matter of great importance that this trade should be fostered by every practicable expedient.

DIRECT TRADE BETWEEN INTERIOR POINTS IN THE UNITED STATES AND FOREIGN COUNTRIES.

The facilities which have been provided for the direct shipment of commodities between distant points in the United States and between points in the Western States and Europe constitute a very important agency in securing cheap transportation. This has been effected

mainly through the saving of terminal and transfer charges and intermediate expenses of various kinds, such as commissions, warehousing, insurance, weighing, &c.

These economies of transport do not, however, alone determine the course of commerce. All experience proves that, in the great commercial movements of the globe, one of the most important economic requirements is the massing of merchandise at the great centers of trade and its distribution thence to the smaller trade centers and to consumers in the ordinary course of business. A single merchant can thus attend to the distribution of as large a quantity of any given article of merchandise as would require the attention of many merchants and forwarders in a direct or comparatively retail trade.

This mode of exchange subserves very important economies, both of transportation and of trade. The quantity of merchandise of one kind transported over a railroad constitutes one of the most important conditions toward securing cheap transportation, and this requirement is met by the traffic afforded by the commerce of a great city. This centralization of trade also utilizes the higher order of talent required in the conduct of large commercial enterprises, and in various ways subserves the interests of commerce; it constitutes the strength of commercial cities; it is the indispensable function of great markets, and it can never be substituted by any general mode of direct trade between the producer and the consumer of every article of merchandise embraced in the grand schedule of human wants. This applies to the exportation of domestic products to foreign countries, to the importation of foreign merchandise into the United States, and, to a great extent, to the movements of our internal commerce.

But in the course of the millions of exchanges which constitute the internal commerce of the United States, the direct transportation of products from the producer to the consumer is oftentimes the more important condition, and this requirement has been met by the facilities of rail-transport provided during the last ten years.

In regard to a very considerable part of the internal commerce of this country there are also obvious limitations to the value of the option of the markets of commercial cities, and to the advantages which they afford through their capital, their warehousing facilities, the tact and commercial knowledge of their merchants, and the economic advantages above alluded to. Accordingly, it is found that wherever excessive intermediate charges, delays, or hinderances occur, commerce avoids such obstructions and moves on direct lines. This applies in widely different degrees to different articles of merchandise, under the great variety of circumstances which present themselves in the course of trade.

The complete elucidation of this subject would involve a dissertation upon the causes of the rise and fall of commercial cities, and it might also

lead into much abstract reasoning. The force of the general proposition, however, that the influence exercised by every commercial city is a limited one, may be shown by means of one or two practical illustrations. A charge exceeding 2½ cents per bushel on grain at the chief Atlantic seaports will tend to force a direct trade in grain between the West and Europe *through those ports.* The same fact is true in regard to the great grain-markets of the West. Whenever the railroads extending east and west from Chicago combine so that the through rate from a point west of Chicago to New York is made about five cents less than the rates to and from that city, it is found that grain is largely deflected from the Chicago market to a direct movement between the point of production and the Atlantic seaport, and perhaps, also, to a direct movement from the remote western point to a port in Europe. It is evident, therefore, that the possibilities of direct shipment from interior points at the West to Europe tend to regulate terminal charges at the great commercial cities, and to enforce upon the merchants of those cities the greatest possible degree of economy in the receipt and shipment of merchandise, and in the conduct of trade generally.

The same thing applies as to direct importations at interior points. The enactment of those laws of the United States under which foreign merchandise is imported directly at the principal cities of the interior undoubtedly resulted from the delays and charges incurred in importing goods through the Atlantic seaports. The value of the merchandise imported directly at interior cities during the year ending June 30, 1876, amounted to only $5,190,433, this amount being but *one per cent.* of the value of the total imports into the United States during that year. It is probable that the economies of commercial operations will enable the great seaports to retain very largely the receipt and distribution of foreign merchandise, as well as the receipt and exportation of domestic productions.

The facilities for direct importation and exportation to and from interior points afford a striking illustration of the regulating power of the competition of transportation-lines, not only over each other but over the profits which may be realized and the charges which may be imposed in the course of trade.

With these prefatory remarks, let us turn to the consideration of some facts which serve to develop the direct shipment of merchandise from interior points in the United States to Europe, and the direct importation of merchandise from foreign countries to interior points in the United States.

The direct shipment of merchandise from interior points in the United States to Europe.

The direct consignment of products of the West from interior points to ports in Europe is one of the results of the formation of through-freight lines and of arrangements entered into between railroads and

ocean-steamer lines. Telegraphic communication between the United States and foreign countries has also served an important part in the development of this direct trade. Soon after the establishment of trans-Atlantic telegraphic communication the market news of foreign countries was published daily in the public journals of all the commercial cities throughout the United States. Purchasers and sellers were thus brought into immediate communication with each other, and in the course of a few years the modes and habits of commerce were conformed to the new order of things.

The relations of this traffic to the interests of the great trunk lines and to the commercial interests of Boston, New York, Philadelphia, and Baltimore, have been for two or three years the subject of a sharp contest. This contest involves the question of determining the relative rates which shall prevail from western points to Boston, New York, Philadelphia, and Baltimore, and also the through rates from interior points to foreign countries, covering both the rail and ocean rates.

Besides the economic features involved, the subject embraces the competition of rival railroads, the competition of product with product in the various markets of the country, and the available supply of tonnage at the various ports. At the north, Boston has claimed the privilege of maintaining lower through-rates on account of the less distance from that port to Europe than from any other Atlantic sea-port, and at the south, Baltimore has claimed the privilege of lower through-rates on account of its shorter rail-line to the trade-centers of the West. This subject is more fully treated of in another section of this report.

As yet the direct exportation of products of the West from interior points is small in proportion to the total quantity of the products of the West which are shipped to the principal seaports on the Atlantic coast, and thence exported to foreign countries.

The direct shipment of western produce from interior points to Europe began in the year 1859, from Cincinnati and Chicago. At that time such shipments were made by way of the Grand Trunk Railway and by steamer from Montreal during the summer months, and by the Grand Trunk Railway and steamer from Portland, Me., during the winter months. For several years this direct shipment was carried on in a small way by private enterprise, and was in the nature of an express business rather than of a general freight traffic.

Direct trade from the West to Europe began via New York in 1861, by means of sailing-vessels, and by steamers in 1863. It was not, however, until about the year 1865 that the direct shipment of the products of the West from interior points to ports in Europe was undertaken by the transportation-lines themselves as a branch of their regular traffic. Since that time the business has grown rapidly. Grain, provisions, and fresh meats are the commodities chiefly shipped direct from points at the West to Europe.

Direct shipments from Chicago to Europe.—A statement of the quantity

of each one of the principal articles exported direct from Chicago to Europe during the year 1876, and the route by which transported, may be found on page 252 of the Appendix.

The growth of the direct exportation of western products from Chicago to Europe is shown as follows:

	1872.	1873.	1874.	1875.	1876.
Flour ..... barrels..	16,293	131,417	64,468	79,767	83,280
Wheat ..... bushels..	268,617	1,420,948	900,193	2,440,713	1,199,718
Corn ..... do ...	388,970	8,600	296,647	708,979	2,316,206
Oats ..... do ...	.....	.....	.....	.....	485,715
Rye ..... do ...	.....	.....	.....	.....	43,243
Barley ..... do ...	.....	.....	.....	.....	57,606
Oatmeal ..... barrels..	.....	.....	.....	.....	11,221
Seeds ..... pounds..	.....	.....	.....	.....	1,733,835
Hides ..... do ...	.....	.....	.....	2,725,164	4,372,007
Leather ..... do ...	.....	.....	.....	325,044	458,559
Beef and pork ..... packages..	16,378	20,382	9,510	13,177	58,426
Bacon and hams ..... do ...	135,173	193,343	215,187	280,717	453,512
Lard ..... do	78,902	96,571	52,057	115,165	184,912
Butter and cheese ..... do	.....	12,249	7,533	55,425	66,910
Tallow ..... do	.....	.....	.....	4,169	17,412
Alcohol ..... barrels..	.....	.....	.....	.....	7,200
Oil-cakes ..... pounds..	.....	.....	.....	.....	5,138,950
Tobacco ..... do	.....	.....	.....	.....	888,603
Miscellaneous ..... tons..	*8,856	*9,020	*57,232	13,860	9,901
Total ..... tons..	77,953	132,474	113,776	219,387	314,507

* Packages.

In regard to this movement, the secretary of the board of trade of Chicago makes the following statement in his report for the year 1876:

Of the shipments by the Pittsburgh, Fort Wayne and Chicago Railway, 136,484 tons were forwarded by the "Black Star Line" and 1,387 by the "Red Star Line." The "Red Star Line" also forwarded to Europe, in addition to that included in the statement, 1,849 tons of valuable goods from California, Alaska, and Japan. Much the largest portion forwarded by the Pittsburgh, Fort Wayne and Chicago Railway was exported via Philadelphia. Of the shipments by the Lake Shore and Michigan Southern Railway, 55,923 tons went via New York Central Railroad to Boston, 26,699 tons via New York Central to New York, and 2,425 via the Erie Railway to New York, the whole being forwarded by the "Merchants' Dispatch" freight-line.

Of the shipments by the Michigan Central Railroad, 28,864 tons was via Boston, and 6,493 was via New York by the "Blue Line," and 12,482 tons was via New York by the "Erie and North Shore Line."

Shipments by the Grand Trunk Railway were by the way of Montreal, Portland, and Boston. Shipments by "Erie and Pacific Dispatch," about 3,500 tons, were made via New York. Those by the "National Line" went largely via Philadelphia, and those by the Baltimore and Ohio Railroad were exported entirely by the way of Baltimore.

The agency of the "American Line" of ocean steamers from Philadelphia to Liverpool forwarded by that line 46,988 tons, and the same agency forwarded by the "Red Star Line" of steamers, Philadelphia to Antwerp, 12,040 tons, and also via Philadelphia to Cork for orders or to direct ports in the United Kingdom nearly 1,500,000 bushels of grain, a small portion of which was shipped hence by lake. The agency of the "Anchor Line" ocean steamers forwarded nearly 10,000 tons, all via New York, and that of the "State Line" forwarded nearly 4,500 tons, also via New York.

Nearly all the ocean-steamer lines to Europe from Montreal, Boston, New York, Philadelphia, and Baltimore now employ agents in Chicago and in Saint Louis, who issue bills of lading direct to Great Britain and to the continent. The several trunk-railroads also employ agents at

these points and at other trade centers, who issue through bills to Europe.

Direct shipments to Europe from Saint Louis.—The shipments on through bills of lading to foreign countries from Saint Louis during the year 1875 were as follows:

	Tons.
Via Baltimore	2,721
Via New York	11,821
Via Philadelphia	785
Via Boston	1,498
Via New Orleans	6,857
Total	23,682

The direct shipment of the products of the interior to foreign countries is chiefly carried on from Chicago, Saint Louis, Cincinnati, and Louisville. Within the last two or three years, however, direct shipments abroad have been made in considerable quantities from points west of Saint Louis and Chicago, and it is believed that this trade is gradually expanding. Already flour has been shipped on direct consignment from Minnesota to Great Britain, and pork has been shipped during the past year from points in Iowa to Belfast and Dublin, Ireland. No means have as yet been provided for ascertaining the quantities of the principal western products exported on bills issued at the West through each one of the chief Atlantic seaports It is stated upon reliable authority that about one-half the grain and flour exported from Boston to Europe during the year 1876 was shipped on through bills issued at the West. It is also stated that only 1,565,920 bushels of grain (including flour) were exported from New York on through bills issued at the West, or a little less than 3 *per cent.* of the total exports of grain at that port. No information can be gained in regard to such direct shipments of grain through Philadelphia. In regard to this direct movement through Baltimore, the secretary of the board of trade of that city says:

> Ten per cent. of the grain shipped hence to foreign ports would fully cover all on through bills in the past and be an over-estimate for the last three months.

In a recent communication to this office, Mr. S. H. Grant, superintendent of the New York Produce Exchange, has expressed a regret that means have not yet been adopted for procuring statistics in regard to this important movement.

In this connection the following extract from a letter to this Department, from Col. Milo Smith, of Clinton, Iowa, is of interest:

> Shipments from Clinton are made this year on account of foreign purchasers. The money is furnished by a house in Belfast, Ireland. The shipments from Cedar Rapids are largely sent to the same place, and the product is drawn against on the bill of lading. The original proprietors of both these establishments came from Belfast, and have their business connections there still. I think there is a steady increase in this mode of doing business, and the indications are that the time is not far distant when not only pork but fresh beef will be prepared here in the West and shipped direct to Europe in large quantities. The tendency here in the West is, so far as possible, to ship direct to the final market, saving thereby all intermediate commissions.

It is stated that those who have embarked in this direct traffic have found that the business could be prosecuted more advantageously at points remote from the chief centers of trade than at such trade centers.

The direct importation of merchandise from foreign countries to interior points in the United States.

The direct importation of merchandise from Europe to interior points in the United States involved a radical change in the customs-regulations of the country. Prior to the establishment of this trade all imported merchandise was required to be inspected and appraised for the imposition of customs-duties at the sea-ports. No foreign goods could be shipped to interior points, unless the duties were either paid or secured through a system of transportation in bond. This involved delays and inconvenience, besides damage to goods by improper repacking, and in cases where merchandise was required to be delivered very quickly, serious losses and embarrassments were sustained by merchants at the interior cities. It was proposed about ten years ago to open this direct import trade, but the objection was urged that it would add greatly to the difficulties of protecting the revenue from customs, and that the necessary precautions for meeting such increased risks would involve so many inconveniences as to counterbalance the advantages which might possibly be realized from the trade. But the facilities which were soon afterward provided for direct transportation on railroads by means of "through-freight-lines," affording security, accountability, and dispatch, led to the passage of the act of July 14, 1870, and to acts amendatory thereof, for the transportation of merchandise in bond without appraisement at the seaport.

The ports from which goods can thus be transported are New York, Philadelphia, Boston, Baltimore, Portland, (Me.,) Port Huron, New Orleans, San Francisco, Detroit, and Toledo. The ports of destination to which goods can be transported directly from the ports of arrival are New York, Boston, Providence, Philadelphia, Baltimore, Norfolk, Charleston, Savannah, New Orleans, Portland, (Me.,) Buffalo, Chicago, Cincinnati, Saint Louis, Evansville, Milwaukee, Louisville, Cleveland, San Francisco, Portland, (Oreg.,) Memphis, Mobile, Detroit, Toledo, and Pittsburgh.

The act of July 14, 1870, not only permits the shipment of goods from the seaports mentioned to the several points in the interior, but also the shipment of such imported merchandise from one seaport to another. The principal requirements of the acts in relation to the direct importation of foreign goods are as follows:

First. The importation of all classes of merchandise is permitted except wine, distilled spirits, perishable and explosive articles, and articles in bulk.

Second. Merchandise to be conveyed in cars, vessels, or vehicles securely fastened with locks or seals, under the exclusive control of officers of the customs.

Third. Common carriers engaging in this traffic are required to give security by bond to the United States in a penalty of not less than $100,000, with at least two securities, conditioned for a faithful compliance with the laws of the United States and the regulations made in pursuance thereof.

Fourth. Only those common carriers are designated who have exclusive direction and control over suitable and sufficient cars or other vehicles for the transportation of such merchandise to the port of final destination, and no vehicles or modes of conveyance are allowed to be employed for this purpose except steamboats, making regular trips between the port of first arrival and the port of final destination, and railroad freight-cars. This requirement limits the traffic to "through" or "fast-freight-line cars" and to steamboats on the Mississippi River running from New Orleans to ports above that city on the Mississippi and Ohio Rivers.

Chicago and Saint Louis are the principal western points at which direct importations are made.

The following facts in relation to the direct foreign trade of Chicago were furnished by Mr. Charles Randolph, secretary of the board of trade of that city. The foreign valuations are given.

Direct importation of merchandise at Chicago.

Year.	Foreign valuation of goods imported.	Duties.
1873	$3,699,852	$1,535,631
1874	3,281,355	1,356,496
1875	3,844,384	1,609,157
1876	3,407,899	1,454,725

The following table gives the quantity of tea imported at Chicago directly during the year 1876.*

Direct importations of tea at Chicago in 1876.

[From the report of the Chicago Board of Trade.]

How shipped.	Japans.	Greens.	Oolongs.	Souchong and Congou.	Total.
Steamer via San Francisco	41,815	17,777	2,423	553	62,568
Steamer via Suez Canal	587	.....	3,067	.....	3,654
Sail-vessels via San Francisco	159	.....	.....	.....	159
Sail-vessels via New York	1,356	1,877	1,089	289	4,611
Total half chests, 1876	43,917	19,654	6,579	842	70,992
Total half chests, 1875	27,343	17,339	1,225	.....	45,907
Total half chests, 1874	25,170	7,350	.....	.....	32,520

* It is stated that large quantities of tea consigned to Chicago merchants on account of New York and San Francisco commission merchants are not included in this statement.

The direct importation of coffee at Chicago is indicated by the following table:

Direct importations of coffee at Chicago during the year 1876.

How shipped.	Rio, bags.	Santos, bags.	Java, mats.	Ceylon, mats.	Singapore, mats.
Steamer	4,100	1,059	.....	.....	.....
Sail-vessels	28,445	2,814	6,007	2,350	1,189
Total, 1876	32,545	3,873	6,007	2,350	1,189
Total, 1875	40,211	7,827	5,199	1,400	.....
Total, 1874	22,666	.....	.....	4,745	.....

The direct importation of merchandise at Saint Louis.—The following facts in relation to the foreign trade of Saint Louis were prepared by Mr. George H. Morgan, secretary of the Merchants' Exchange of that city. The direct importation at Saint Louis began in 1871, soon after the passage of the act providing therefor, but it was greatly restricted by certain customs-regulations which have since been abrogated. In 1871 there were but *thirty entries* at the Saint Louis custom-house, and in 1876 *nearly three thousand.* In 1875 there were imported at Saint Louis, through New Orleans 27,629 tons of merchandise, and through eastern ports 945 tons of merchandise.

It is believed that this direct trade will be greatly increased during the present fiscal year.

The following table gives the foreign values of merchandise imported at Saint Louis and the duties thereon:

Year.	Foreign valuation of goods imported.	Duties.
1869	$3,272,276	$1,711,256 19
1870	3,848,000	1,996,083 49
1871	5,129,000	1,874,907 20
1872	5,060,000	1,697,563 27
1873	4,055,000	1,376,466 32
1874	4,469,000	1,674,116 53
1875	2,292,000	1,159,849 17
1876	3,100,000	1,748,374 30

NOTE.—This table embraces both goods imported under the act of July 14, 1870, and forwarded without appraisement at the seaports and goods appraised at the seaports and forwarded in bond.

The foregoing table indicates an increase in the amount of duties collected at Saint Louis in 1876, over the amount collected in 1875, of nearly 60 per cent., notwithstanding the general falling off in the total customs-revenues of the country.

No statistics of the direct importation of merchandise at interior ports were published by the Treasury Department prior to the year 1873

The value of such imports since that time is presented in the following table:

Year.	Value.
1873	$9,354,352
1874	6,635,667
1875	7,945,913
1876	8,833,892

The value of merchandise imported at interior ports during the years 1875 and 1876, without appraisement at the first port of entry, is presented in the following table:

Ports.	1875.	1876.
Baltimore	$7,176	$1,943
Boston	254,024	353,156
Buffalo	106,217	112,395
Chicago	2,721,903	3,065,492
Cincinnati	566,989	571,013
Cleveland	144,558	121,255
Detroit	158,750	162,013
Evansville	136	1,103
Rochester	.....	8,669
Louisville	94,493	82,363
Memphis	16,299	33,841
Toledo	6,010	11,240
Milwaukee	107,015	107,077
New York	48,847	5,106
Philadelphia	561,966	606,223
Pittsburgh	64,811	87,420
Portland, Me	.....	791
Providence	186,087	305,724
San Francisco	2,018,720	2,370,516
Saint Louis	881,912	826,552
Total	7,945,913	8,833,892

The privilege of importing direct at interior points without appraisement at the seaports has been very beneficial to the commercial interests of the western cities, and it is believed that upon the general revival of business throughout the country this branch of commerce will rapidly increase. The facilities afforded by through-freight lines, steamer-lines, and combinations between railroads and steamer-lines for the direct consignment of goods on through bills and the general extension of telegraphic facilities are constantly tending towards direct trade.

At the present time the direct importation of merchandise at interior points is hampered by certain objectionable features of the existing law. *First.* The exception of wines and liquors from the privileges of direct importation at interior points appears to be based upon no good reason touching either the interests of commerce or of the customs-revenues of the country. The inviolability of liquor packages in transit is believed to be as fully secured by locks and seals as are packages of silk of greater value. *Second.* The bonds required to be filed at the seaports are excessive, and operate as a burden upon the merchants at interior points.

The direct exportation of products of the West to foreign countries and the direct importation of merchandise from foreign countries at

interior points in the Western States are enterprises as yet in their infancy; but the success which has attended the efforts put forth during the last five years seems to point to undeveloped possibilities of railway transportation in connection with the facilities afforded by ocean-steamer lines and telegraphic communication.

COTTON.

I.—THE RELATIVE COMMERCIAL CHARACTERISTICS AND THE MOVEMENTS OF THE COTTON-CROP OF THE UNITED STATES.

In view of the important bearing of the cotton-crop upon both the internal and the foreign commerce of the United States, more attention has been paid to the statistical development of its magnitude and of its movements than of any other crop.

For the purpose of forming a correct estimate of the relative importance of the cotton-crop, a few facts may be presented in regard to—

The commercial characteristics of some of the more important crops of the country.

The following table has been collated from the report of the Department of Agriculture and the report on the commerce and navigation of the United States, the several crops being presented in the order of their home value.

Statement showing the total weight and value of the principal crops of the United States, and the value of the exports thereof.

Crop of 1875.	Total weight of crop in tons.	Total value of crop.	Value of exports during the year ending June 30, 1876.
Grain:	*Tons.*		
Corn	36,989,932	$555,445,930	$34,570,307
Wheat	8,764,080	294,580,990	92,816,369
Oats	5,669,080	129,499,930	588,583
Barley	885,806	29,952,082	210,584
Rye	496,218	13,631,000	519,137
Buckwheat	252,052	7,166,267	.....
Total grain	53,057,168	1,030,276,199	128,704,980
Hay	27,873,600	342,203,445	134,017
Cotton	1,081,000	272,036,400	192,659,262
Potatoes	5,006,310	65,019,420	431,443
Tobacco	189,673	30,342,600	25,570,538

The cereals being chiefly commodities of domestic consumption, a large proportion of the several grain-crops never reach any of the great transportation-lines. To a great extent, producer, manufacturer, and consumer reside within the limits of a single State, and oftentimes within the same neighborhood. In many cases the producer and the consumer are represented in the same person.

Potatoes and hay are almost exclusively articles of domestic consumption, and therefore they furnish relatively but little employment to the

transportation-lines of the country and to shipping upon the ocean. Although the value of the hay-crop exceeds the value of the cotton-crop by $69,267,045, the value of the cotton exported during the last fiscal year amounted to $192,659,262, whereas the value of the hay exported amounted only to the inconsiderable sum of $134,017. Of the total cotton-crop 70 per cent. was exported, and of the hay-crop *less than* $\frac{1}{25}$*th of* 1 *per cent. was exported.* Practically, therefore, hay is not an article which enters directly into foreign commerce.

The value of the cotton-crop of 1875 appears to have been only one-fourth of the value of the entire grain-crop of that year, and yet the value of the exports of cotton exceeded the value of the exports of grain by $63,954,282.

The value both of the wheat-crop and of the corn-crop exceeded the value of the cotton-crop, yet the value of the exports of cotton exceeded the total value of the exports of wheat and corn.

This is shown as follows:

Product.	Total value of crop of 1875.	Value of exports.
Wheat	$294, 580, 990	$92, 816, 369
Corn	555, 445, 930	34, 570, 307
Wheat and corn	850, 026, 920	127, 386, 676
Cotton	272, 936, 400	192, 659, 262

Of the products of agriculture exported from the United States, cotton is the first in order, as appears by the following table, compiled from the Annual Report on Commerce and Navigation for the year ending June 30, 1876:

	Value exported.
Cotton	$192, 659, 262
Wheat	92, 816, 369
Corn	34, 570, 307
Tobacco	25, 570, 538
Oats	588, 583
Rye	519, 137
Potatoes	431, 443
Barley	210, 584
Hay	134, 017

Cotton being the leading article of exportation, it is of especial importance with respect to the financial interests of the country in so far as relates to the balance of trade, or the flow of the precious metals to and from the United States. But, in the highest sense of the term *commerce*, the importance of each crop must be estimated according to its total home value, *as each crop is either directly or indirectly the subject of commercial exchange.* In this sense the corn-crop of the country stands first, the hay-crop second, the wheat-crop third, and the cotton-crop fourth.

In its ordinary signification the term "*commerce*" is confined to transportation on the great commercial highways and to exchanges in the chief marts of trade. This meaning has perhaps attached to the word from the fact that these exchanges are the only features of commerce which are susceptible of statistical development. There are, however, millions of exchanges concerning which no statistics can be presented, either with respect to quantity or value, but which conduce quite as much to the prosperity of the country as do those more striking exchanges just mentioned.

Commercial exchange is a fundamental condition of both individual and national prosperity, and it is evident that those exchanges which take place within the narrow limits of a country village may subserve this end quite as effectually as do those more striking exchanges which are made across continents and oceans. This is proved by the fact that those States are most prosperous which produce the largest quantities of hay, potatoes, the cereals, and other products of the farm which do not bear transportation to distant markets, or of which a much smaller proportion is exported than of cotton. The statistics presented in our decennial censuses showing the increase of the wealth and population of the several States, in connection with the general distribution of the crops, afford a demonstration of this fact.

The fact that those crops which do not bear transportation to foreign countries are still in the highest degree productive of individual and national wealth, serves also to illustrate the statement made at the beginning of this report, that the internal commerce of the country greatly exceeds in importance its foreign commerce. In this connection, it is a matter of interest to observe the fact that

The commercial characteristics of the various products of the country differ widely with respect to the interests of transportation and of trade.

Probably coal furnishes a larger amount of employment for transportation-lines than any other single commodity, yet there are other commodities which are of greater importance with respect to the exchanges at the chief centers of trade, and which to a greater extent subserve the interests of commercial cities.

The most important products of agriculture in the United States being cotton and breadstuffs, it is well to note the relative commercial importance of these products with respect to the interests of transportation and of trade.

Of the total grain-crop of the surplus grain-producing States of the West, (Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Kansas, and Nebraska,) amounting in 1872 to 1,028,987,300 bushels, there was shipped out of those States only 213,021,426 bushels, or 21 *per cent.* of the entire crop;* whereas of the total cotton-crop of 1875,

* Report of Senate Committee on Transportation, page 13.

amounting to 4,632,313 bales, there was shipped out of the cotton-growing States 4,498,676 bales, or 97 *per cent.* of the entire crop.

The *weight* of grain shipped out of the surplus-grain-producing States, and of cotton shipped out of the cotton States was as follows:

	Tons.
*Weight of grain shipped	5,538,557
Weight of cotton shipped	1,057,189

The grain-crop therefore afforded *about five times as much employment to the vehicles of commerce in the act of transportation out of the producing States as did the cotton-crop.*

The relative *value* of the grain and of the cotton shipped out of the surplus-producing States was however, as follows:

†Value of grain shipped	$106,515,713
Value of cotton shipped	266,906,447

This approximately represents the relative importance of the two commodities with respect to *the interests of trade*, although it is probable that, with respect to profits resulting from commercial exchanges at the chief centers of trade, cotton was of greater relative importance than this comparison of values indicates.

The difference in the commercial characteristics of the different crops with respect to the interests of transportation and of trade is also strikingly exemplified in our exports to foreign countries. During the crop year 1875–'76 about 70 *per cent. of the cotton-crop was exported to foreign countries*, whereas during the year ending June 30, 1876, *only about* 6 *per cent. of the total grain-crop was exported.*

In the order of value of domestic exports during the year ending June 30, 1876, cotton was first and grain second, the value of the exports of these two commodities having been as follows:

Value of cotton exported	$192,659,262
Value of grain exported	128,704,980

This approximately represents the relative importance of the two commodities *with respect to the interests of trade.*

In weight *or employment of tonnage upon the ocean*, however, grain was first and cotton second, as appears by the following statement:

	Tons.
Weight of grain exported	3,332,882
Weight of cotton exported	745,703

In attempting to arrive at the relative commercial importance of the products of the country, it is necessary to observe carefully these two distinctions, viz: First, the dictinction *with respect to the interests of*

* In this computation the average weight of all grains is assumed to be 52 pounds per bushel, and the average weight of cotton is assumed to be 470 pounds per bale.

† In this computation the average home-value of all kinds of grain is estimated at 50 cents per bushel, and the average home-value of cotton is estimated at $59.33 per bale.

trade between those exchanges which take place between distant points through the great markets, and those exchanges which are confined to States or neighborhoods; and, second, the distinction as to the different relations which the various products of the country sustain *to the interests of transportation.*

With these distinctions clearly in mind, attention is called to the following statements in regard to the movements of the cotton-crop of the United States.

The movements of the cotton crop of the United States.

The cotton-crop of the United States during each year from 1840 to 1876 is presented in the following table:

Year.	Number of bales.	Year.	Number of bales.
1840	2, 177, 835	1859	3, 851, 481
1841	1, 634, 945	1860	4, 669, 770
1843	1, 683, 574	1861	3, 656, 086
1843	2, 378, 875	1862	*1, 000, 000
1844	2, 030, 409	1863	*1, 000, 000
1845	2, 391, 503	1864	*800, 000
1846	2, 100, 537	1865	*500, 000
1847	1, 778, 651	1866	2, 154, 476
1848	2, 347, 634	1867	1, 951, 988*
1849	2, 728, 596	1868	2, 430, 893
1850	2, 096, 706	1869	2, 260, 557
1851	2, 355, 257	1870	3, 114, 592
1852	3, 015, 029	1871	4, 347, 006
1853	3, 262, 882	1872	2, 974, 351
1854	2, 930, 027	1873	3, 930, 508
1855	2, 847, 399	1874	4, 170, 388
1856	3, 527, 845	1875	3, 827, 845
1857	2, 939, 519	1876	4, 632, 313
1858	3, 113, 962		

* Estimated.

The total quantity of cotton produced during the last three years appears to have been greater than during any previous consecutive period of three years in the history of the cotton-culture in this country.

Owing to the important commercial and financial bearings of the cotton-trade with respect to those larger exchanges between sections and countries, the statistics of its movements have been more carefully and systematically collected than those relating to any other product of American industry. The statistics of the movements of cotton presented in the following tables are compiled from the annual crop statements of the New York Shipping List down to the year 1871. From 1872 to 1874 the statistics are from the New York Commercial and Financial Chronicle, and from 1875 they are compiled from the reports of the National Cotton Exchange of America, the principal office of which is at New Orleans. Much valuable information in regard to the movements of cotton has been furnished to this Department by Mr. Henry G. Hester, secretary of the New Orleans Cotton Exchange. Attention is called to the statement presented by him, which may be found in the Appendix, pages 166 to 185, inclusive. The movements of the cotton-crop are ascertained by noting the quantity received at, and shipped

from, each one of the Atlantic and Gulf ports, and at each point on the Mississippi Rivers.

Twenty years ago the entire cotton-crop was transported to South Atlantic and Gulf ports, chiefly to the latter, and thence by sailing-vessels to northern ports and to foreign countries. Since that time, however, great changes have taken place both as to the vehicles employed and as to the modes of commerce on the land and on the sea. A large and rapidly growing proportion of the cotton is now shipped "overland by rail" to northern seaports and to northern manufacturers.

By the "overland movement" is meant the shipment of cotton on railroads from the cotton-growing States to the North Atlantic States.

This movement embraces the transportation of cotton from the point of production to and over the east and west trunk railroads, situated between the Ohio River and the lakes. The growth of this movement may be inferred from the following statement:

OVERLAND MOVEMENT.

	Bales.
1855	7,661
1860	108,676
1870	380,813
1876	695,622

The immediate destination of the cotton transported overland during the year 1875–'76 was as follows:

	Bales.
To northern seaports	390,295
Direct to northern manufacturers	305,327
Total overland movement	695,622

There was no shipment of cotton direct to northern mills by rail prior to the year 1867, but in 1876, as above stated, this movement amounted to 305,327 bales.

The total northern movement overland and by sea from southern posts during the crop-year 1875–'76 appears to have been as follows:

	Bales.
Taken by northern spinners	1,220,555
Shipped to northern ports and thence exported to foreign countries	710,985
Total movement to North Atlantic States	1,931,540

By North Atlantic States is here meant States north of the southern boundary of Virginia.

It appears therefore that the total "overland movement" (695,622 bales) constituted 57 per cent. of the entire quantity manufactured in the Northern States, and 36 per cent. of the total movement to the North. Very little if any cotton is shipped north of Norfolk, Va., by rail; no record having yet been made of cotton crossing the Potomac River.

The following table shows the general course of the overland movement during the crop-year ending August 31, 1876:

Received at—

	Bales.
Saint Louis	242,949
Hannibal, Mo	27,676
Cairo, Ill	111,762
Evansville	20,002
Louisville	242,587
Cincinnati	43,934
At other points	6,712
Total	695,622

The great improvements made in cotton-presses during the last five years have led to very important economic advantages as to the transportation of cotton by rail. Formerly only about twenty-two bales of cotton could be loaded into a railroad-car, but by the use of the improved compress, about forty-seven bales can now be carried in the same car space, an increase of over 100 per cent. This has greatly reduced the cost of transportation, and has tended to change the course of the cotton movement.

The movements of the entire cotton-crop of the year 1875–'76 appear to have been approximately as follows:

	Bales.
Shipped to Gulf ports	2,283,214
Shipped to South Atlantic ports	1,519,840
Shipped overland	695,622
Taken by southern manufacturers	133,637
Total crop	4,632,313

From this it appears that the "overland" or all-rail movement was a little less than half the movement to Atlantic ports south of the Potomac River, and that the movement to Gulf ports was about 50 per cent. greater than the movement to South Atlantic ports.

A few facts as to the movements of cotton at some of the out-ports or points of departure from the cotton-belt, and also at some of the more important cotton-markets within the cotton-belt, will serve to indicate the present modes of transportation and the striking changes which have taken place in the movements of cotton within a few years.

COTTON MOVEMENTS AT CERTAIN IMPORTANT POINTS.

Louisville, Ky.—Of the total receipts at Louisville during the years 1874 and 1875, 99 per cent. was received by rail and 1 per cent. by river.

Memphis, Tenn.—During the year 1860 there were received at Memphis but 46,000 bales of cotton. Then there were no railroads extending from that city into the States west of the Mississippi River, nor were there any facilities afforded for all-rail shipments to the North Atlantic States. But during the last cotton-year, (ending August 31, 1876,) there were received at Memphis nearly 500,000 bales of

cotton, these large receipts being due mainly to the facilities afforded by rail-lines for direct shipment to the North Atlantic States.

The following table indicates the movements of cotton from Memphis during the year 1875–'76 and the mode of transportation:

	Bales.
Shipped north:	
By river	85,673
By rail	179,391
Total shipped north	265,064
Shipped south:	
By river	71,141
By rail	42,778
Total shipped south	113,919
Shipped east:	
By rail	105,562
None by river.	

The quantities of cotton shipped north, east, and south from Memphis were as follows:

Direction.	Bales.	Per cent.
Shipped north	265,064	55
Shipped east	105,562	22
Shipped south	113,919	23
Total shipped	484,545	100

From this it appears that a very large proportion of the shipments from Memphis has been changed from the New Orleans and Gulf route to a northern and eastern movement, all of the eastward and 68 per cent. of the northward movement being by rail. All that is shipped north by river is transferred to railroads at Cincinnati or Saint Louis, or at other river ports. Nearly all the cotton shipped east from Memphis by rail to South Atlantic ports, viz, Savannah, Charleston, Wilmington, and Norfolk, is thence shipped coastwise to North Atlantic ports, or is exported directly from the South Atlantic ports to foreign countries.

Of the southward movement 62 per. cent was shipped by river to New Orleans, and 38 per cent. was shipped by rail.

Of the total quantity of cotton shipped from Memphis, 68 per cent. was shipped by rail, and only 32 per cent. by river.

Of the total river movement, amounting to 156,814 bales, 54 per cent. was shipped north, and only 46 per cent. was shipped south.

Norfolk.—In the year 1855 there were shipped from Norfolk only 31,000 bales, and only 37,000 bales in 1867; but railway connections having been completed throughout the South, there were shipped from Norfolk during the year ending August 31, 1876, nearly 500,000 bales, the greater part of which came from Memphis and Nashville by rail.

Mobile.—There was received at the port of Mobile in the year 1855 as follows:

	Bales.
By river	436,343
By rail	None.
Total	436,343

And in 1875 as follows:

	Bales.
By river	144,263
By rail	230,409
Total	374,672

There appears to have been a falling off in the receipts at Mobile, by river, amounting to 292,080 bales, and a development of rail-receipts amounting to 230,409 bales.

The following table prepared by Mr. Henry G. Hester, secretary of the New Orleans Cotton Exchange, indicates the sources of receipts at the principal southern seaports during the crop year ending August 31, 1876:

At—	By rail.	By water.	Total.
	Bales.	*Bales.*	
New Orleans	318,610	1,105,393	1,424,003
Mobile	230,409	144,263	374,672
Galveston	266,125	199,404	465,529
Total at these Gulf ports	815,144	1,449,060	2,264,204
Savannah	499,470	25,250	524,720
Charleston	375,057	21,360	396,417
Total at all these southern seaports	1,689,671	1,495,670	3,185,341

New Orleans is still the chief cotton-receiving port of the United States, the receipts during the year 1875–'76 having been nearly three times as great as those at Savannah, the next largest cotton-port. Of the total receipts at New Orleans, amounting to 1,424,003 bales, 1,105,393 bales or 78 per cent. was received by river, and only 318,610 or 22 per cent. by rail. New Orleans still possesses very superior advantages over all the other cotton-ports of the United States in consequence of her far-reaching and invaluable facilities of transport by river, but the fact that there was received but 318,610 bales of cotton *by rail*, the larger portion of this being by the rail and steamer line from Galveston, (which merely passed directly through the city,) in connection with the large diversion of cotton on rail-lines to other cities, shows that New Orleans greatly lacks rail-communications with all parts of the cotton-growing States not reached by the Mississippi River or by any of its navigable tributaries. Already the facilities of transport by rail north of New Orleans have caused the deflection of nearly 700,000 bales by the overland movement, besides the large movement eastward to Savannah, Charleston, and Norfolk.

DIRECT TRANSPORTATION OF COTTON TO FACTORIES.

During the last ten years a large amount of cotton has been purchased at the South by manufacturers in the Northern States and in foreign countries, and transported by direct consignment from the point of production to the factory. This new mode of commercial intercourse is carried on through agents who make selections throughout the cotton States of the exact grades desired. By this means the incidental expenses of commissions, warehousing, handling, &c., are saved. This has tended to increase the direct overland rail movement.

There are now many routes for the transportation of cotton, and at all the important competing centers of the South the option is presented of shipment in several different directions. The competition between the rival routes is very sharp, and oftentimes a difference of $\frac{1}{8}$ to $\frac{1}{4}$ of a cent per pound will turn the course of the cotton trade in one direction or in another.

THE EXPORTATION OF COTTON.

The following table shows the quantity of cotton exported from the United States to Great Britain, to France, and to all other countries during the years 1850, 1860, 1870, and 1871 to 1876, inclusive:

Cotton exported.

Year.	To Great Britain.	To France.	To all other countries.
	Pounds.	*Pounds.*	*Pounds.*
1850	431, 531, 091	125, 834, 091	78, 016, 422
1860	1, 264, 136, 782	283, 967, 334	219, 562, 222
1870	649, 165, 778	153, 146, 501	156, 246, 244
1871	1, 102, 322, 343	59, 611, 304	300, 994, 377
1872	703, 914, 765	88, 187, 183	140, 435, 465
1873	858, 649, 331	113, 370, 036	228, 044, 163
1874	903, 571, 772	177, 365, 583	277, 664, 948
1875	911, 941, 759	155, 139, 454	193, 337, 690
1876	957, 329, 739	203, 975, 759	330, 099, 836

It appears that during the seven years, 1870 to 1876, inclusive, 70 per cent. of the exports of cotton from the United States was to Great Britain, 11 per cent. to France, and 19 per cent. to all other countries.

The following table, showing the exportation of cotton from northern and from southern ports, has been compiled from the annual reports of the commerce and navigation of the United States. By "northern ports" is meant all ports north of the mouth of the Potomac River, and by "southern ports" all ports south of the mouth of that river.

Exports of cotton from northern ports and from southern ports of the United States from 1856 to 1876.

[Compiled from the annual reports on commerce and navigation.]

Year ending June 30—	From northern ports.	From southern ports.	Total.	Per cent. from northern ports.
	Pounds.	*Pounds.*	*Pounds.*	
1856	118, 912, 547	1 232, 590, 154	1, 351, 432, 701	8
1857	83, 873, 594	964, 408, 881	1, 048, 282, 475	8
1858	68, 962, 951	1, 049, 663, 061	1, 118, 629, 012	6
1859	73, 816, 492	1, 312, 652, 070	1, 386, 468, 562	5
1860	108, 071, 273	1, 659, 615, 065	1, 767, 686, 338	6
1861*	132, 129, 436	175, 386, 663	307, 516, 099	.....
1862*	5, 064, 564	.....	5, 064, 564	.....
1863*	9, 522, 624	1, 862, 362	11, 384, 986	.....
1864*	9, 801, 456	2, 192, 455	11, 993, 911	.....
1865*	6, 056, 495	550, 671	6, 607, 166	.....
1866*	No report.	.....	.....	.....
1867	196, 585, 659	464, 887, 929	661, 473, 588	29
1868	169, 308, 984	615, 454, 649	784, 763, 633	21
1869	138, 059, 024	506, 268, 897	644, 327, 921	21
1870	194, 118, 376	764, 440, 147	958, 558, 523	22
1871	321, 037, 284	1, 141, 890, 740	1, 462, 928, 024	22
1872	177, 279, 756	756, 257, 657	933, 537, 413	19
1873	268, 553, 787	931, 509, 743	1, 200, 063, 530	22
1874	284, 552, 703	1, 074, 049, 600	1, 358, 602, 303	21
1875	271, 023, 367	989, 395, 536	1, 260, 418, 903	21
1876	260, 676, 353	1, 230, 728, 981	1, 491, 405, 334	17

* No accurate reports were received or kept, owing to the rebellion.

It appears from the foregoing table that during the five years 1856 to 1860, inclusive, 6.6 per cent. of the total exports of cotton from the United States was from northern ports and 93.4 per cent. from southern ports, and that during the ten years 1867 to 1876, inclusive, 21½ per cent. of the exports of cotton was from northern ports and 78½ per cent. from southern ports.

THE COTTON-TRADE OF GREAT BRITAIN.

Great Britain is the chief market for American cotton. The amount imported into that kingdom from the United States and from all other countries is shown in the following table:

Year.	Total quantity consumed.	Imported from the United States.	Per. cent from the United States.	Year.	Total quantity consumed.	Imported from the United States.	Per cent. from the United States.
	Bales.	*Bales.*			*Bales.*	*Bales.*	
1830	832, 000	618, 000	73. 4	1863	1, 378, 000	132, 000	9. 9
1840	1, 250, 000	1, 238, 000	99. 1	1864	1, 566, 000	198, 000	12. 6
1850	1, 514, 000	1, 184, 000	78. 8	1865	2, 035, 000	462, 000	22. 6
1851	1, 663, 000	1, 394, 000	83. 8	1866	2, 386, 000	1, 163, 000	48. 8
1852	1, 861, 000	1, 789, 000	96. 1	1867	2, 573, 000	1, 216, 000	47. 6
1853	1, 904, 000	1, 532, 000	78. 0	1868	2, 802, 000	1, 269, 000	45. 3
1854	1, 967, 000	1, 666, 000	84. 7	1869	2, 628, 000	1, 040, 000	39. 5
1855	2, 101, 000	1, 623, 000	77. 2	1870	2, 797, 000	1, 664, 000	59. 4
1856	2, 183, 000	1, 758, 000	80. 5	1871	3, 115, 000	2, 249, 000	72. 5
1857	2, 031, 000	1, 482, 000	73. 0	1872	3, 266, 000	1, 404, 000	43. 0
1858	2, 175, 000	1, 863, 000	85. 6	1873	3, 180, 000	1, 898, 000	59. 6
1859	2, 297, 000	2, 086, 000	95. 1	1874	3, 269, 864	1, 856, 000	56. 7
1860	2, 523, 000	2, 581, 000	102. 3	1875	3, 155, 620	1, 836, 000	58. 6
1861	2, 364, 000	1, 841, 000	77. 8	1876	2, 925, 156	2, 004, 000	68. 5
1862	1, 185, 000	72, 000	6. 1				

It will be seen from this table that the quantity of cotton exported to Great Britain during the five years from 1856 to 1860, inclusive, was about the same as during the five years from 1872 to 1876, inclusive, but that Great Britain has so far developed the importation of cotton from other countries that the exports from the United States have fallen from an average of 87.3 per cent. during the former period to 57.3 per cent. during the latter period.

Very interesting information in regard to cotton may be found in the statement made to this Department by Mr. H. G. Hester, secretary of the New Orleans Cotton Exchange. (Appendix, p. 166.)

Attention is also called to the statistics in regard to cotton. (Appendixes 33, 34, 35, 36, and 37.)

These statements show the total exports of cotton and the quantity exported to each country, from 1856 to 1876, inclusive; the importation of cotton into the United Kingdom of Great Britain and Ireland, from 1853 to 1874, inclusive; the quantity of cotton consumed in Great Britain, and the quantity imported from the United States from 1830 to 1876, inclusive; the value per pound of upland cotton exported from the United States during each year from 1856 to 1876, inclusive, and the movements of cotton from the cotton States from 1855 to 1876, inclusive.

8.—FOREIGN COMMERCE IN ITS RELATIONS TO INTERNAL COMMERCE.

A thorough development of this important subject would require much more space than can be given to it in this report. The following statement embraces a few of the more striking facts in regard to the foreign commerce of the United States. It relates chiefly to the movements of that commerce at the principal seaports of this country and especially to the movements of the grain-crop.

The interests of the interior transportation-lines of the United States and the commerce over those lines are intimately related to the carrying trade upon the ocean and to our commerce with foreign nations. No fixed relation exists between the magnitude of the home and of the foreign commerce of any seaport. A seaboard city of the United States may have a very large internal commerce and enjoy a high degree of commercial prosperity with little or no foreign commerce; but no city can enjoy the advantages of a large foreign commerce unless it has also a large internal commerce with its accompanying facilities of transportation. The relative magnitude of the internal commerce and the foreign commerce of the several seaports of the United States therefore differs very widely.

The magnitude of the foreign commerce of a port depends mainly upon its geographical position, the depth of water in its harbor, its accessibility to the ocean, the force of established commercial relations, internal lines of transport, and the intelligence and enterprise of its merchants.

The statistics showing the growth of the foreign commerce of the

principal seaports of the United States also indicate the advantages realized by those ports from their facilities of transportation to the interior.

The following table indicates the value of imports at the six principal commercial ports of the United States from 1860 to 1876, inclusive:

Imports at Boston, New York, Philadelphia, Baltimore, New Orleans, and San Francisco, 1860 to 1876.

Year.	Boston.	New York.	Philadelphia.	Baltimore.	New Orleans.	San Francisco.
1860	$39, 366, 560	$233, 692, 941	$14, 696, 801	$9, 784, 773	$22, 922, 773	$9, 577, 921
1861	44, 014, 151	222, 966, 274	12, 625, 442	9, 449, 105	11, 960, 869	8, 506, 506
1862	23, 957, 621	143, 215, 636	9, 883, 586	5, 817, 190	.....	8, 366, 238
1863	27, 063, 272	177, 254, 415	7, 392, 765	4, 484, 399	1, 425, 567	10, 692, 409
1864	30, 263, 853	229, 506, 499	9, 141, 672	5, 835, 503	1, 483, 692	15, 065, 478
1865	94, 540, 494	154, 139, 409	7, 319, 590	4, 816, 454	1, 475, 657	6, 173, 011
1866*	.....	.....	.....	.....	.....	.....
1867*	.....	.....	.....	.....	.....	.....
1868	37, 039, 736	242, 580, 659	14, 597, 765	12, 930, 733	11, 386, 858	19, 503, 987
1869	44, 636, 967	295, 117, 682	15, 967, 556	15, 863, 032	11, 414, 693	18, 088, 901
1870	47, 524, 845	293, 990, 006	14, 500, 797	19, 512, 468	14, 993, 754	21, 834, 103
1871	53, 653, 225	357, 909, 770	17, 798, 006	24, 672, 871	19, 427, 238	20, 384, 907
1872	70, 398, 185	418, 515, 829	20, 383, 853	28, 836, 205	18, 542, 188	33, 330, 501
1873	68, 083, 307	426, 321, 427	25, 393, 150	29, 287, 603	19, 933, 344	39, 422, 604
1874	52, 212, 405	395, 133, 622	28, 447, 037	29, 302, 138	14, 533, 864	39, 248, 390
1875	51, 992, 226	368, 637, 580	24, 236, 387	27, 788, 992	12, 356, 487	29, 697, 483
1876	37, 416, 623	311, 712, 910	22, 471, 516	22, 340, 629	11, 602, 803	34, 085, 481

* No record kept for these years.

The relative growth of the import-trade of New York, as compared with that of the cities of Boston, Philadelphia, and Baltimore, is shown by the following statement.

Value of imports at New York during the five years from 1860 to 1864, inclusive	$1, 005, 635, 765
Value of imports at New York during the five years from 1872 to 1876, inclusive	1, 920, 321, 368
Increase of imports	914, 685, 603
Value of imports at Boston, Philadelphia, and Baltimore during the five years from 1860 to 1864, inclusive	253, 726, 719
Value of imports at Boston, Philadelphia, and Baltimore during the five years from 1872 to 1876, inclusive	536, 580, 356
Increase of imports	282, 853, 637

It appears from foregoing statement that during the latter period of five years there was an increase of 91 per cent. in the imports at New York and of 111 per cent. in the imports at Boston, Philadelphia, and Baltimore. The actual increase of imports at New York amounted, however, to $914,685,603, and the actual increase of imports at Boston, Philadelphia, and Baltimore to only $282,853,637; the increase of imports at New York exceeding the increase at Boston, Philadelphia, and Baltimore by $631,831,966. In consequence of the events of the late war, no proper comparison can be made as to the growth of commerce at New Orleans.

The following table indicates the value of exports at the six principal commercial ports of the United States:

Value of exports at Boston, New York, Philadelphia, Baltimore, New Orleans, and San Francisco, 1860 to 1876.

Year.	Boston.	New York.	Philadelphia.	Baltimore.	New Orleans.	San Francisco.
1860	$13,530,770	$120,630,955	$5,512,755	$8,804,606	$107,812,580	$7,398,394
1861	12,947,276	137,379,956	9,865,651	12,949,625	6,823,357	10,414,462
1862	12,183,046	152,377,961	11,054,630	8,375,303	.....	11,705,218
1863	19,150,215	221,917,978	12,236,197	11,013,871	.....	9,944,114
1864	15,240,097	211,237,222	10,166,098	8,741,755	.....	48,198,072
1865	19,219,499	219,379,873	10,978,603	11,794,546	3,259,882	12,814,694
1866	.....	.....	.....	.....	.....	.....
1867	17,298,307	207,382,457	16,585,132	10,995,348	82,995,294	23,712,235
1868	15,690,873	236,031,239	14,384,761	13,857,391	58,538,524	23,790,164
1869	13,118,827	185,384,264	14,585,173	13,657,530	75,131,704	27,540,018
1870	12,251,267	209,972,491	16,903,072	14,330,248	107,658,042	32,186,021
1871	12,961,291	285,530,775	17,903,027	15,037,855	93,953,081	20,791,414
1872	21,443,154	270,413,674	20,982,876	18,325,321	89,501,149	26,243,061
1873	27,038,925	313,129,963	24,903,125	19,344,177	104,329,965	38,716,497
1874	28,335,627	340,360,269	33,098,905	27,513,111	93,259,299	33,563,846
1875	29,187,165	329,201,913	28,568,019	27,515,657	71,461,272	28,949,886
1876	36,041,892	294,705,902	40,254,075	31,216,807	83,897,691	28,867,564

The relative increase of domestic exports at New York and at Boston, Philadelphia, and Baltimore is indicated by the following comparative statements:

Value of domestic exports at New York during the five years from 1860 to 1864, inclusive	$843,544,072
Value of domestic exports at New York during the five years from 1872 to 1876, inclusive	1,547,811,721
Increase	704,267,649
Value of domestic exports at Boston, Philadelphia, and Baltimore during the five years from 1860 to 1864, inclusive	171,771,295
Value of domestic exports at Boston, Philadelphia, and Baltimore during the six years from 1872 to 1876, inclusive	413,088,826
Increase	241,317,541

This statement indicates an increase of $241,317,541, or 140 per cent., in the value of the exports at Boston, Philadelphia, and Baltimore, and an increase of $704,267,649, or 83 per cent., in the exports of New York. The actual increase at New York exceeded the increase at Boston, Philadelphia, and Baltimore by $462,950,108.

On page 237 of the Appendix may be found a table showing the tonnage entered at Montreal, Boston, New York, Philadelphia, Baltimore, New Orleans, and San Francisco from 1853 to 1876.

The relative increase of tonnage at New York and at Boston, Philadelphia, and Baltimore is shown as follows:

	Tons.
Tonnage entered at New York from 1860 to 1865, inclusive	13,817,015
Tonnage entered at New York from 1871 to 1876, inclusive	25,602,230
Increase	11,785,215
Tonnage entered at Boston, Philadelphia, and Baltimore from 1860 to 1865, inclusive	6,024,432
Tonnage entered at Boston, Philadelphia, and Baltimore from 1871 to 1876, inclusive	10,881,382
Increase	4,856,950

The tonnage entered at New York during the latter period of six years was 85 per cent. greater than during the former period; and the tonnage entered at Boston, Philadelphia, and Baltimore during the latter period was 80 per cent. greater than during the former period. The actual increase at New York was, however, 11,785,215 tons, while at Boston, Philadelphia, and Baltimore it was only 4,856,950 tons.

The statistics indicating the growth of the foreign commerce of Boston, New York, Philadelphia, and Baltimore serve to illustrate the extent of the diversion of commerce from the northern water-line, as well as the development of commerce in consequence of the construction of railroads.

Prior to the year 1865 the exportable products of the Western States reached the Atlantic seaboard chiefly by the lakes, the Erie Canal, and the Hudson River, and New York City enjoyed almost a monopoly of that commerce; but, as shown in another connection, the trunk lines extending to the West from the other seaports have to a considerable extent diverted this trade from the canal. The trunk lines of railroads have, however, developed commerce to a greater extent in sections of the country which did not before contribute to the traffic of the northern water-line than they have diverted commerce from that line. These trunk lines, by their rail and water connections at the East, tend somewhat to distribute the foreign commerce of the country among the principal seaports.

The foreign commerce of Boston, in so far as it embraces the exportation of products of the West and the shipment of foreign imports from that city to the West, either through the markets of that city or by direct trade between the West and Europe, is in a large degree dependent upon the New York Central Railroad, the interests of which road are more closely identified with the commercial interests of the city of New York than of Boston. The Grand Trunk Railroad of Canada, although a somewhat circuitous route, is also a very important highway of commerce between the New England States and the Western States. The interests of this line are mainly identified with the commercial interests of Montreal. But, as already explained in another connection, neither of these roads nor any combination of roads between Boston and the West can afford to maintain a policy in contravention of the natural course of trade, and, therefore, notwithstanding the partiality which the managers of these lines may entertain toward the cities with which their interests are most intimately connected, they are to a certain extent compelled to favor the commercial interests of Boston.

There are several steamer lines connecting Philadelphia and Baltimore with ports in Europe, and the railroads terminating at those cities have secured such terminal facilities as to afford the means of through transportation from interior points in this country to ports in Europe with the least possible delay and at the smallest possible cost. The interests of these roads are mainly identified with the commercial

interests of Philadelphia and Baltimore, respectively. Yet the Pennsylvania Railroad has termini at New York and at Baltimore, and the Baltimore and Ohio Railroad is within certain commercial and territorial limits a competitor of the direct rail lines to Philadelphia, to New York, and to Boston, by means of its eastern rail and water line connections. The railroads to the West from New York, Philadelphia, and Baltimore are also by means of connections with coastwise steamer-lines, to a certain extent competitors for the western trade of Boston. Through these facilities of transportation the markets of the four principal Atlantic seaports are brought into close competition with each other, in so far as relates to the foreign commerce of the country.

THE EXPORTATION OF BREADSTUFFS AT THE PRINCIPAL ATLANTIC SEAPORTS.

The transportation of breadstuffs affords a larger amount of employment to the East and West trunk railroads, to the northern water-line, and to ships upon the ocean than any other product of the country. The following facts in regard to the exportation of grain from the principal seaports of the Atlantic and Gulf coast have, therefore, an important bearing upon the changes which have taken place both in the course of the foreign and of the internal commerce of the United States.

The following table indicates the quantity of wheat, wheat-flour, and corn exported from the five principal ports on the Atlantic and Gulf coasts from 1856 to 1876, inclusive:

Year ending June 30—	Ports.				
	Boston.	New York.	Philadelphia.	Baltimore.	New Orleans.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1856	840, 972	16, 492, 538	2, 441, 178	3, 530, 783	5, 170, 238
1857	956, 197	21, 011, 730	2, 845, 474	3, 987, 607	4, 315, 844
1858	734, 150	10, 706, 395	1, 810, 558	3, 218, 459	3, 867, 666
1859	684, 941	6, 263, 722	999, 027	1, 791, 848	862, 847
1860	794, 800	8, 803, 327	1, 202, 651	1, 874, 815	589, 005
1861	1, 247, 355	40, 189, 883	4, 207, 207	4, 111, 310	167, 630
1862	2, 257, 460	56, 943, 942	5, 334, 523	2, 736, 347	
1863	1, 666, 514	49, 567, 522	3, 631, 859	2, 566, 964	169, 521
1864	1, 380, 663	30, 018, 158	1, 863, 970	1, 663, 219	184, 598
1865	1, 122, 132	13, 864, 147	1, 306, 435	1, 302, 750	138, 751
1866, (no record)					
1867	506, 051	14, 240, 947	1, 222, 829	1, 407, 678	150, 666
1868	844, 472	19, 579, 536	1, 104, 736	1, 741, 369	807, 559
1869	838, 163	17, 224, 452	552, 222	1, 735, 791	1, 391, 194
1870	809, 945	29, 011, 391	1, 710, 202	2, 517, 794	1, 717, 183
1871	1, 232, 515	31, 941, 546	1, 571, 478	3, 477, 532	1, 255, 612
1872	2, 282, 955	41, 341, 341	4, 435, 885	6, 572, 375	1, 195, 588
1873	1, 896, 217	41, 432, 766	3, 893, 167	7, 590, 930	1, 189, 484
1874	2, 480, 235	71, 476, 486	6, 854, 918	11, 984, 120	2, 123, 239
1875	3, 169, 833	50, 295, 189	7, 306, 033	10, 988, 031	818, 955
1876	4, 648, 947	57, 983, 122	15, 921, 711	18, 542, 161	1, 967, 483

It appears from the foregoing table that during the last five years there has been a much more rapid increase in the exports of grain at Boston, Philadelphia, and Baltimore than at New York, although at the close of the year 1876 the latter port maintained its position as the first grain-exporting port of the country.

Comparing the exports of wheat and corn at each one of these ports during the last ten years with the exports during the first ten years, we obtain the following expression of the growth of the grain-trade at the several cities:

Port.	Exports, 1856 to 1865.	Exports, 1867 to 1876.	Actual increase.	Percentage of increase.
	Bushels.	*Bushels.*	*Bushels.*	
Boston	11, 685, 184	18, 702, 333	7, 017, 149	60
New York	253, 861, 384	373, 806, 076	119, 944, 692	32
Philadelphia	25, 642, 882	44, 573, 181	18, 930, 299	74
Baltimore	26, 784, 102	66, 488, 381	39, 704, 279	148
New Orleans	15, 466, 100	12, 636, 933	*2, 829, 107	*22

* Decrease.

The increased exports of wheat and corn from New York amounted to 119,944,692 bushels, and the increased exports at all other ports amounted to 62,822,560 bushels. The increased exports at New York appear to have exceeded the increased exports at all other ports by 57,122,132 bushels.

THE COUNTRIES TO WHICH BREADSTUFFS ARE EXPORTED FROM THE UNITED STATES.

Of the total exports of grain from the United States to foreign countries about 96 per cent. consists of wheat and corn. For the purpose of illustrating the subject to which this section of the present report relates, we may, therefore, confine our attention to the exportation of these grains.

The following statement indicates the total number of bushels of wheat (including wheat-flour) and corn exported from the United States each year from 1865 to 1876, inclusive:

Year ending June 30—	Bushels.	Year ending June 30—	Bushels.
1865	96, 570, 264	1871	63, 351, 184
1866	No record.	1872	74, 722, 765
1867	28, 673, 888	1873	92, 169, 089
1868	39, 816, 536	1874	127, 496, 232
1869	38, 003, 866	1875	102, 937, 853
1870	56, 041, 267	1876	125, 661, 214

Wheat.—The quantity of wheat exported from the United States to each one of the principal foreign countries is shown in the table on page 233 of the Appendix. It appears from this table that during the last five years 65 per cent. of the wheat and wheat-flour exported from the United States was shipped directly to Great Britain. Besides, almost all the wheat and wheat-flour exported to Canada was afterward shipped

from Montreal to Great Britain. Adding the latter to the direct exports, it appears that about 74 per cent. of our exports of wheat and wheat-flour was to Great Britain.

The following table shows the quantity of wheat exported from the United States to each of the principal grain-importing countries of the globe during the year 1876:

Wheat exported to each foreign country during the year ending June 30, 1876.

Countries.	Bushels.	Per cent.
Great Britain and Ireland	48, 932, 577	65. 5
Canada and other British possessions of North America	8, 221, 842	11. 2
West Indies and Central America	2, 510, 824	3. 4
Brazil	2, 680, 900	3. 7
France	521, 136	.1
All other countries	11, 883, 403	16. 1
Total	74, 750, 682	100

As already stated, almost all the wheat exported to Canada was afterward shipped from Montreal to Liverpool, and therefore constituted a part of the wheat-export from the United States to Great Britain.

Corn.—On page 234 of the Appendix may be found a table indicating the number of bushels of corn, including corn-meal, exported from the United States to foreign countries from 1850 to 1876, inclusive.

It appears from this table that during the last five years 76 per cent. of all the corn exported from the United States was shipped direct to Great Britain.

The following table shows the quantity of corn exported during the year 1876 to each one of the principal grain-importing countries of the globe:

Corn exported to each foreign country during the year ending June 30, 1876.

Countries.	Bushels.	Per cent.
Great Britain and Ireland	42, 453, 356	83
Canada and other British possessions in North America	4, 652, 690	10
West Indies and Central America	504, 836	1
Germany	741, 216	1
France	246, 629	0. 5
All other countries	2, 307, 525	4. 5
Total	50, 905, 252	100

Almost all the corn exported to Canada was afterward shipped from Montreal to Liverpool, and therefore constituted a part of the corn export from the United States to Great Britain.

The quantities of both wheat and corn exported to each foreign country and the total quantity exported from the United States appear to be subject to great fluctuations. Since 1860 our annual exportations of wheat have ranged from 12,000,000 bushels to about 90,000,000 bushels, and our annual exportations of corn have ranged from 2,000,000 to 50,000,000 bushels.

THE GRAIN-TRADE OF GREAT BRITAIN.

It appears from the foregoing tables that of the total quantity of wheat and corn exported from the United States during the last five years, about 82 per cent. was shipped to Great Britain, our principal customer in the grain-trade. The general facts as to the sources of supply of Great Britain are, therefore, of especial interest in this connection. The United Kingdom of Great Britain and Ireland is the chief grain-market of the world. All the Indian corn and about 50 per cent. of the wheat consumed in Great Britain is imported from foreign countries.

Wheat.—The principal competitors of the United States in the British wheat market, as appears from the table on page 235 of the Appendix, are Russia, Germany, Egypt, Turkey, Wallachia, Moldavia, Chili, Australia, Denmark, France, Austria, India, Spain, and Italy.

Including in the imports of wheat from the United States into Great Britain the wheat imported from British North America, all of which is produced in the United States and exported *via* Montreal, it appears that during the five years from 1862 to 1866 31 per cent. of the total quantity of wheat imported into Great Britain was imported from the United States and 19 per cent. from Russia, and that during the five years from 1870 to 1874 47 per cent. of the wheat was imported from the United States and 28 per cent. from Russia.

The following table shows the total quantity of wheat and wheat-flour imported into Great Britain, the total quantity imported from the United States, the percentage of the quantity imported from the United States, the average value per bushel of the total quantity of wheat imported, and the average value per bushel of the wheat imported from the United States during the period from 1860 to 1874 inclusive.

Statement showing the quantity of wheat and wheat-flour imported into Great Britain from 1860 to 1874, with the quantity of the same imported from the United States.

[Compiled from the British reports of Trade and Navigation.]

Year.	Wheat and wheat-flour imported.		Per cent. from the United States.	Average value of the total wheat imported.	Average value of wheat imported from the United States.
	Total.	From the United States.			
	Bushels.	*Bushels.*			
1860	58,915,534	17,254,953	29.2	$1 68	$1 74
1861	69,659,375	28,916,637	41.5	1 66	1 66
1862	92,570,775	40,287,083	43.5	1 48	1 52
1863	57,157,618	21,977,249	38.4	1 29	1 31
1864	53,829,443	18,811,204	34.9	1 19	1 21
1865	48,241,295	2,797,347	5.8	1 20	1 24
1866	54,827,133	1,840,960	3.3	1 45	1 53
1867	73,055,391	9,504,567	13.0	1 87	2 01
1868	68,144,617	12,606,326	18.5	1 75	1 90
1869	82,969,172	28,597,813	34.4	1 34	1 40
1870	68,891,418	28,106,839	40.8	1 36	1 37
1871	82,709,501	29,167,285	35.2	1 53	1 56
1872	88,877,406	17,984,117	22.4	1 62	1 69
1873	72,241,038	32,994,023	45.0	1 82	1 85
1874	68,532,516	30,483,485	44.5	1 71	1 72

Corn.—The principal competitors of the United States in the British corn market, as appears from the table on page 236 of the Appendix, are Turkey, Russia, Wallachia, Moldavia, Austria, Morocco, France, Egypt, and Italy. The importation of corn from the United States into Great Britain, although an exceedingly fluctuating trade, exhibits, on the whole, a very considerable increase. Including in the imports of corn from the United States into Great Britain the corn imported from British North Amarica, all of which is produced in the United States and exported via Montreal, it appears that during the five years from 1862 to 1866 there was imported into Great Britain from the United States 43,254,899 bushels of corn, and during the five years from 1870 to 1874 there was imported from the United States 107,331,383 bushels. The imports of corn from the United States during the first period of five years amounted to only 44 per cent. of the total imports, but during the last five years they amounted to 57 per cent. of the total imports. This indicates a large increase in the exportation of corn from the United States to Great Britain.

The following table shows the quantity of corn and corn-meal imported into Great Britain from the United States, the percentage of the whole quantity imported from the United States, the average value of the total quantity of corn imported, and the average value of the corn imported from the United States.

Statement showing the quantity of corn and corn-meal imported into the United Kingdom (England, Ireland, and Scotland) from 1860 to 1874, inclusive, with the quantity of the same imported from the United States.

[Compiled from the British reports of Trade and Navigation.]

Year.	Corn imported.		Per cent. from the United States.	Average value of total corn imported.	Average value of corn imported from the United States.
	Total.	From the United States.			
	Bushels.	*Bushels.*			
1860	14,928,329	3,456,890	23.4	$1 03	$1 07
1861	24,740,439	13,801,870	55.8	94	94
1862	22,001,912	12,274,414	55.8	84	83
1863	23,780,433	8,496,321	35.8	82	81
1864	12,235,068	556,296	4.5	81	86
1865	13,259,418	3,310,259	25.0	81	83
1866	26,758,870	13,001,279	48.6	82	81
1867	15,956,227	8,951,350	56.1	1 16	1 17
1868	22,959,230	8,001,416	34.9	1 02	1 04
1869	35,340,304	2,721,354	8.0	80	80
1870	33,595,048	57,462	.1	83	90
1871	33,669,440	14,652,730	43.5	93	93
1872	49,065,340	33,961,366	69.2	86	86
1873	38,562,181	19,218,488	49.8	92	92
1874	33,802,231	24,026,201	71.8	1 10	1 10

Corn being a commodity of low value, there appears to be good reason to believe that if the low freight-rates which have prevailed on the transportation-lines of the United States from the corn-producing area to the seaboard shall continue, there will be a great increase in the exportation of corn to Great Britain and other foreign countries. The fall in

the average freight-charges for the transportation of corn from Chicago to New York from 26.6 cents per bushel in 1872 to 8.6 cents per bushel in 1876 has been the chief cause of the great increase of our export of corn to foreign countries.

COMPARATIVE PRODUCTION AND CONSUMPTION OF BREADSTUFFS IN GREAT BRITAIN AND IN THE UNITED STATES.

It is a matter of interest in this connection to note the differences as to the sources of supply of wheat and corn and the consumption of those grains in Great Britain and in the United States—the two principal commercial nations of the globe.

The estimated amount of the wheat-crop of Great Britain, according to the latest returns, is 99,918,400 bushels, and that of the United States 292,136,000 bushels. The annual consumption in England amounts to about 184,000,000 bushels, and in the United States to about 218,000,000 bushels. The population of the United Kingdom (England, Scotland, Ireland, Wales, and adjacent islands) is about 33,000,000, and the population of the United States is about 43,000,000. During the year 1876 there was produced within the United Kingdom only about one-half of the entire quantity of wheat consumed in that country, or about 92,000,000 bushels, and about the same amount was imported from other countries. There was, however, produced within the United States, during the year ending June 30, 1876, a sufficient supply of wheat for its entire population, and besides a surplus of 74,750,682 bushels, or 26 per cent. of the entire crop which was exported to foreign countries.

Great Britain depends entirely upon other countries for her immense supply of corn, the consumption during the year 1876 having amounted to 73,000,000 bushels, the estimated cost of which in England was $75,000,000; whereas during the last crop-year of which a record has been made it appears that the United States produced 1,321,069,000 bushels, of which about 1,270,000,000 bushels were consumed in this country, and 50,910,532 bushels, or only 4 per cent., was exported. The corn-crop, however, indirectly contributes very much more than this to the exports of the United States in the form of spirits, beef, pork, provisions, and products of animals of various kinds.

The amount of grain which can be exported from the United States to Great Britain depends upon several circumstances, among which may be mentioned the abundance or scarcity of the crops in all the surplus-grain-producing countries, the cost of internal transportation in every country from which she draws her supplies, the cost of ocean-transportation from those countries, and all the circumstances bearing upon the prosperity of her commercial and manufacturing interests.

The facts embraced in the following extract from a recent letter addressed to this Department by Mr. George U. Porter, secretary of the Baltimore Board of Trade, are of interest in this connection:

> The increased export-trade in wheat and corn from the United States during the last two years is doubtless in part to be attributed to the low rates of interior transporta-

tion, which has enabled the western producers to compete successfully with the production of other nations in the English markets, and the low prices which have there prevailed have caused increased consumption, particularly of corn, which, at 27*s.* per quarter, would be fed more largely than at 30*s.*, and at any higher figure the quantity would decrease. In regard to wheat, the "western spring" comes into competition more nearly with the Russian product in the English markets, and is growing in favor, so much so that several of the largest houses previously engaged in importing the Russian wheat have of late turned their attention to the United States.

The winter-wheat crop is smaller, being confined to the belt of central States, and there has been very little surplus of this description over home wants for several years; hence the light export of it.

To sum up the matter: everything which has tended to cheapen the cost at the seaboard ports has contributed to enable our country to find a market for its surplus production of wheat and corn abroad in competition with all other producing countries. I think, however, that the very low freights which prevailed inland have inured more directly to the advantage of the western producers than to any other interest.

It appears from very recent information that the average weekly consumption of Indian corn in the United Kingdom during the year 1876 was 1,390,730 bushels, as against 771,078 bushels in 1875, an increased consumption of 80 per cent. in one year; which appears to have been attributable largely to the reduction in the cost of corn, mainly in consequence of reduced cost of transportation.

COMPARATIVE MAGNITUDE OF THE HOME AND THE FOREIGN GRAIN MARKETS.

Notwithstanding the great value of the grain-export trade of the United States and the prominent position which our country maintains with respect to this trade in the grain-markets of the world, it is a matter of interest to advert to the fact that the home market is very much more important than the foreign market. According to a careful computation made by the Senate Committee on Transportation, it was ascertained that during the year 1872, there was produced within the States of Ohio, Michigan, Indiana, Illinois, Wisconsin, Missouri, Kansas, Nebraska, Iowa, and Minnesota 1,028,987,000 bushels of grain of all kinds, of which there was consumed in those States 815,955,574 bushels, and shipped out of them 213,021,426 bushels. Of this latter amount, representing surplus production, there was shipped to other States in this country 138,660,648 bushels, and exported to foreign countries, 74,360,778 bushels. The quantity exported appears to have been only about one-half the quantity shipped to home markets, and to have constituted only about 7 per cent. of the entire grain-crop of the United States. This affords another illustration of the statement made at the beginning of this report, that the internal commerce of the United States is of very much greater importance than the foreign commerce.

STATISTICS OF THE FOREIGN COMMERCE OF THE UNITED STATES.

The following table indicates the value of the imports and exports of the United States from 1790 to 1876, the value in both cases being stated in gold. Net imports are given, *i. e.*, the value of the total imports, less

the value of foreign merchandise afterward exported, and which, of course, does not properly constitute a par of the foreign trade of the United States:

Statement exhibiting the gross specie value of imports and exports from September 30, 1790, to June 30, 1876.

Year.	Foreign imports.	Domestic exports.	Year.	Foreign imports.	Domestic exports.
1790	$22, 460, 844	$19, 666, 000	1861	$315, 004, 726	$298, 699, 486
1800	52, 121, 891	31, 840, 903	1862	168, 902, 263	210, 688, 675
1810	61, 008, 705	42, 366, 675	1863	226, 796, 336	241, 997, 474
1820	56, 441, 971	51, 683, 640	1864	309, 305, 955	243, 977, 589
1830	56, 489, 441	59, 462, 029	1865	216, 441, 495	201, 558, 372
1840	88, 951, 207	113, 895, 634	1866	430, 770, 041	420, 161, 476
1850	163, 186, 510	136, 946, 912	1867	397, 222, 067	339, 618, 069
1851	194, 526, 639	196, 689, 718	1868	349, 023, 682	353, 135, 875
1852	195, 656, 060	192, 368, 984	1869	418, 140, 841	318, 082, 663
1853	250, 420, 187	213, 417, 697	1870	431, 950, 428	420, 500, 276
1854	279, 712, 187	252, 047, 806	1871	513, 033, 809	512, 802, 267
1855	233, 020, 227	246, 708, 553	1872	617, 569, 017	501, 285, 371
1856	298, 261, 364	310, 586, 330	1873	635, 467, 636	578, 938, 985
1857	336, 914, 524	338, 985, 065	1874	572, 080, 910	639, 333, 166
1858	251, 797, 008	293, 758, 279	1875	531, 472, 589	598, 737, 753
1859	317, 873, 053	335, 894, 385	1876	455, 407, 836	586, 128, 501
1860	335, 233, 232	373, 189, 274			

9.—THE REGULATION OF THE RAILROADS BY THE STATE.

The construction of railroads has forced its way against the prejudices, the opposing interests, and the habits of the world, strengthened by the usages of centuries. But it was not to have been expected that an intruder so vigorous and of such marked peculiarities could pass through the various stages of development without much frictional resistance and a great deal of direct opposition.

The difficulties touching the relations of the railroads to the public have arisen in part from the clashing of the interests of the companies with those of individuals, but to a much greater extent as the result of those larger questions of a public character, growing out of the dual nature of railroads as public highways and as commercial enterprises. Even at this day the relations of the railroads to the public interests are not fully determined. Within the last three years the people of several of the States have been brought face to face with fundamental questions of public policy touching the duties and the rights of railroad corporations.

In regard to this many-sided question, affecting so many vital interests, it is not strange that widely-different views should have been entertained nor that a great variety of expedients should have been proposed for the correction of abuses. The views which have been advanced embrace constitutional and legal, commercial and economic questions. The present consideration of the subject is confined mainly to its commercial and economic bearings.

Soon after the railroad became an assured success, the enterprise, the capital, and the inventive genius of the world were earnestly enlisted in the development and utilization of the new invention. Extravagant

and, as it now appears, absurd notions were at first entertained in regard to the possibilities of railroads. A period of wild railroad speculation followed. Public sentiment being strongly enlisted in favor of the new mode of transport and of travel, obstacles to the success of railroad enterprises were for a long time set aside by the force of public opinion acting through the legislatures and the courts. In several of the States of this country railroads were constructed recklessly, and far in advance of the actual needs of commerce.

In all the States of the Union, the railroad system has grown up under the principle of independent corporate ownership. At first, railroad charters were granted by special legislation, but afterward, in many of the States, by the provisions of general railroad laws. The extension of the rule of constitutional law enunciated in the Dartmouth College case to railway charters gave to the companies almost unlimited power in regard to the establishment of rates and fares, and enabled them in many cases to impose such charges and to make such discriminations as their caprices or their views of policy might dictate. It is not strange, therefore, that the incipiency of railroad enterprises was characterized by gigantic blunders and serious abuses.

The railroad companies themselves, as well as the public, have suffered from the effects of inexperience. Errors of judgment, involving the loss of millions of dollars, have been made in the location, the construction, and the management of railroads, and in the advancement of the system in all its interests and relations. Perhaps the most serious losses have resulted from mistakes and dishonorable exploits in railway financiering. It is stated upon good authority that at the close of the year 1876 the total bonds, stock, and debt of railroads in the United States amounted to $4,775,000,000, and that of this enormous sum 38 per cent., or $1,800,000,000, is represented by railroads in default, and is wholly unproductive to the investors. Besides this, there are many railroads in the country which manage to pay the interest upon their bonded indebtedness, but which pay no dividends, or very small ones, upon their stock. This has caused an enormous shrinkage in the value of the stock of such roads. It is estimated that the actual shrinkage or loss in railroad property amounts to fully 50 per cent. of the entire capital of the railroads of the country, or to about $2,387,000,000, a sum exceeding the national debt of the United States.

Every improvement in the art of railroad construction and management has involved an enormous waste of capital and of effort, and the system has in every phase of its existence advanced toward its present stage of progress through the slow and oftentimes discouraging process of experiment. These things have been unavoidable incidents of a tentative period. But through all these difficulties, abuses, and discouragements, the railroad system has steadily advanced until it has become deeply rooted in the social, commercial, and political organization of society. The habits of the people have also been rad-

ically changed by conformity to the exigencies of the new mode of intercommunication.

Many of the abuses and evils which have sprung up with the railroad system are traceable to the fact that railroads have never been, and perhaps in the nature of things never can become, free highways in the sense in which the term "free" applies to navigable waters and to wagon roads. When railroads were first introduced, it was supposed that they could be operated in the same manner as other public highways; but it was soon demonstrated that upon an avenue of commerce the pathway of which is no wider than the wheel of the vehicle which moves upon it, not only the road itself but the entire equipment and motive power must be placed under the control of one central organization. The peculiarities of the railroad as a public highway are based upon this mechanical feature, and to it may be directly traced almost every question which has arisen respecting the relations of the railroads to the public. The circumstance just alluded to gave to the railroad system certain marked characteristics of monopoly, and at an early day serious apprehensions were entertained as to the abuses which might arise in the course of the development of the system. But the popular demand for railroads at almost any cost set at rest all these fears. Some of the evils encountered have in the progress of events worked out their own cure, some have been adjusted by legislation and by the courts, some have been corrected by the railroad companies themselves, while others remain unsettled, constituting what is termed "the railroad problem of the day."

No attempt has ever been made either in the United States or in Great Britain toward the adoption of a general policy of railway construction, and the result is that railroads have been located and constructed with little regard to the public interests, except as those interests have been in harmony with the interests of the companies. In many cases two railroads have been built between the same points, where one road could have done all the business at much less cost. Competition in railroad construction and management has, however, from the beginning, enjoyed the largest liberty, and public sentiment has sustained this policy, in the belief that it was better to allow the system to work out its own destiny under the stimulus of individual enterprise than to attempt to place it under the control of the State. The genius of our governmental institutions has also prompted to this course.

The exploits which have characterized railway financiering from the beginning to the present time, perhaps present the most extraordinary spectacle in the history of railroad construction. Among the methods pursued may be mentioned: *First.* Corrupt contracts with corporations for the construction of the roads, the parties forming such contracts with the railway corporations being officers of the railroad companies or persons acting in their interest. Such contracts were evidently in

direct conflict with good morals and with established principles of law. *Second.* The fraudulent purchase of branch roads, the managers of the trunk-lines being interested in such transactions. *Third.* The manage ment of railroad interests in such manner as alternately to raise and lower the value of stocks and bonds for speculative purposes. *Fourth.* Misrepresentations in the published statements of receipts and expenditures of roads. *Fifth.* The granting to individuals the privilege of engaging in certain branches of traffic, by which means the profits of railroads have been diverted from their stockholders. *Sixth.* The issuing of railroad-bonds upon the faith of fictitious subscription to stock. This practice was quite common during the flood-tide of railway speculations.

In some of the States railroads have been built almost exclusively from the proceeds of bonds sold at a large discount. Owing, however, to the rapid increase of wealth and population in some of the Western States many railroads, constructed even under such an abnormal mode of financiering, have become profitable to their stockholders. The very success of enterprises of this character tended for a while to demoralize the public mind respecting the construction of railroads in this country. But the exposure from time to time of these schemes and the frequent collapse of inflated values eventually put a stop to such ventures. The hope may be indulged that hereafter the railroad system of the country will be extended upon sound commercial and financial principles, and that it will keep pace with the legitimate development of the resources of the country.

The granting of railroad charters and other legislation in behalf of railroads have been marked by blunders and abuses which form a discreditable record in the history of railroad construction both in England and in the United States. The manifest advantages to be gained from railroad construction and the force of public opinion strongly in favor of the companies for many years impelled legislators to extend to them extraordinary privileges, subsidies, and immunities.

The popular sentiment which impelled the National Government to make large contributions in aid of the construction of railroads in the Western States and Territories also led several of the States to pursue a similar policy with respect to railroads projected within their territorial limits. The plan of granting direct aid to railroads by subscriptions to their stock, and by guarantees of their bonds, prevailed quite extensively in the Western States during the period of wild and reckless railroad adventures. Serious mistakes were made in the manner of granting such aids. In some of the Western States, counties, towns, and cities were empowered to subscribe to the stock of projected roads and to become guarantors of their securities. In the State of Wisconsin the people authorized towns and counties to issue their bonds, secured by mortgages upon lands, the owners of the lands taking in exchange for such securities the stock of the projected railroads.

At that time railroad projectors were regarded almost as public benefactors, and an enterprising but incautious people, actuated solely by the motive of developing the resources of their new-found western homes, paid little attention to the possible consequences of the obligations which they assumed for the sake of securing the advantages of railroad transportation. The proceeds from the various forms of aid extended to railroads in the Western States were largely squandered or misappropriated, and there appears to be little doubt that a very large proportion of the funds realized from the various forms of aid found its way into the pockets of dishonest railroad financiers. A large number of the roads ultimately became bankrupt, entailing heavy losses upon the people who had contributed toward their construction.

But whatever may have been the mistakes and abuses which have marked the construction of railroads in the United States, it is evident that the system has been the instrumentality through which a vast territory has been developed and through which grand achievements have been made in material prosperity and greatness. The progress of the railroad system has been a contest between opposing forces. Many victims have been left upon the field of battle, but a great victory has been won.

DISCRIMINATIONS AND OTHER ABUSES.

Unjust discriminations and exorbitant freight-charges were the immediate cause of the popular uprising against railroad management in the Western States. It is evident that certain discriminations must be made in railway charges, from the fact that no common measure of the value of the services rendered by railroads can be devised. The unit of measure most frequently referred to in theoretical discussions is *the cost of transporting one ton of freight one mile;* but this unit, as we have seen, is inapplicable to the cost of transporting freights under the almost infinite variety of circumstances which present themselves.

The service rendered by railroad companies as transporters of many kinds of commodities, especially those shipped in single packages and requiring much care and personal service, cannot be estimated by weight, nor is distance in such cases a criterion of cost. In many cases the cost of hauling freight bears but a small proportion to the total cost of receiving it from the shipper, holding it in warehouse, and delivering it to the consignee; and especially is this true in regard to commodities transported short distances. Discriminations, or differences in the rate of charges with respect to the conditions of *weight* or *distance*, may therefore be regarded as proper, if the rates charged are not out of proportion to the actual value of the services rendered.

The discrimination known as the "classification of freights" is based upon several conditions, among which may be mentioned, differences in the cost of transporting different commodities, the value of different commodities, quantity moved of one kind, the competitive influence of

rival transportation lines, and the effect of the competition of rival markets upon traffic in different articles of merchandise. A consideration of these facts clearly indicates that the question as to whether discriminations are just or unjust is an exceedingly complex one. Not only is it difficult to decide in special cases, but it is also a very difficult matter to formulate general rules upon the subject. The question is not an absolute but a relative one, the relationships presenting themselves under an almost infinite variety of circumstances.

Discriminations in rates exist upon all free highways where competition prevails among common carriers, and frequently in quite as marked a degree as on railroads. Discriminations in opposition to the common-law rule which forbids the charging of different rates for the transportation of commodities *under similar conditions* are evidently unjust. In practice, however, the cases in which the conditions may be said to be quite similar are comparatively few, while the cases in which they are unlike are many.

Instances may be adduced in which railroad companies charge a greater rate for hauling commodities over a part than over the entire length of their roads. In many cases this practice is unjustifiable, but it is susceptible of proof that oftentimes the actual cost to a company of hauling freight between intermediate points on a railroad is greater than the cost of hauling it over the entire length of the road. This has already been explained in the section of this report entitled "The Economy of Transport by Rail."

The charging of lower rates for the transportation of merchandise for one shipper than for another constitutes a most irritating and flagrant class of discriminations. This practice is calculated to destroy the vital principle of competition in trade and to paralyze commercial enterprise. No partiality should be extended to one shipper over another, except upon well-defined economic considerations touching the quantity of merchandise transported and the actual expense incurred by the transporter in each case. But sound views of public policy touching the importance of preventing the common carrier from interfering with the freedom of trade may to a certain extent compel equal rates even in the face of certain acknowledged economic principles.

As we have already seen, the cost of transportation is greatly affected by the quantity of freight transported; yet it would be utterly impracticable to change rates continually, according to the fluctuations in the amount of traffic. In an agricultural country the fluctuations in the quantity of freights at different seasons of the year are very great. The establishment of rates appears therefore to be a question of general averages, rather than of special adjustments in order to meet all the exigencies of commerce.

For several years railroads have discriminated to such an extent against the commercial and industrial enterprises of certain cities in

this country that fears have been entertained of the practicald confiscation of hundreds of millions of capital invested in productive enterprises. Such a result is not only to be deprecated, but, if possible, to be prevented. If such destruction of values should be brought about either by the voluntary or the involuntary action of railroad managers, a doubt might arise in the public mind as to the security of property in all commercial cities.

It is exceedingly difficult to draw any definite line of distinction between just and unjust discriminations, under the almost infinite variety of forms in which they present themselves. No particular charge for transporting freight can be proved to be absolutely equitable in comparison with any other freight-charge. There are all degrees of discrimination, from those which command general approval to those which are most irritating and most detrimental to the interests of producers, of consumers, and of merchants. A railroad commissioner of a western State, being asked why he did not in his annual report present a few marked instances of unjust discriminations, replied that to have done so would have been an unjust discrimination against the roads named, as all the roads discriminate in such manner and to such extent as their interests appear to require.

It is to be regretted that railroad managers should have failed to unite their efforts with those of railroad commissioners in endeavoring to ascertain through scientific and practical investigations such facts as may be useful in formulating rules for determining the distinctions between just and unjust discriminations.

The limits of this report will not admit of an elaborate treatise upon this difficult and complicated subject. A partial and imperfect view may, however, be afforded through one or two practical illustrations having a special bearing upon through traffic between the East and the West. The striking differences which exist between local and through rates are well illustrated by the following schedule showing the rates which prevailed in October, 1876, for the transportation of corn from various points to Baltimore, Md. This schedule was prepared by Mr. George U. P. Porter, secretary of the board of Trade of Baltimore, Md.

From—	Miles.	Rate per 100 pounds.
		Cents.
Chicago	840	17½
Lafayette	780	20
Indianapolis	716	17
Toledo	668	14
Chambersburgh	135	17
Shippensburgh	125	17
Hanover, Pa	50	11½
Hagerstown	86	12
Smithsburgh, Md	77	16
Frederick	63	12½
Summit, Va	100	16
Harrisonburgh, Va	181	18

The following statement by Mr. Porter in regard to the discriminations indicated in the foregoing schedule is of interest in this connection:

Discriminations as to distance are the rule and not the exception with most roads. Where there is no competition, the rates by comparison appear to be disproportioned and strikingly high, but the fact should not be lost sight of, that from these local points the amount of business is usually insignificant compared with that to be obtained from the chief competing centers in the far West. On the Cumberland Valley Railroad in Pennsylvania, from points distant 125 and 135 miles, respectively, from Baltimore, one-half of which distance (from Harrisburgh) is over the Northern Central road, (now worked by the Pennsylvania Company,) the rate is 17 cents per 100 pounds, which is but half a cent less than the latter company charges to Baltimore from Chicago, a distance of 900 miles. Again, by the Baltimore and Ohio road from Frederick, distant from Baltimore but 63 miles, 12½ cents per 100 pounds is the rate, while from Chicago, 815 miles, the rate is only 5 cents more.

The rates charged by other trunk lines from interior points to Atlantic seaports exhibit similar discriminations with respect to distance. The extension of railroads throughout the country has to a great extent eliminated the consideration of distance, or at least greatly reduced its value as an element of the cost of transportation.

The following illustration, presented by Mr. J. D. Hayes, of Detroit, Mich., points to another feature of the subject of discrimination. It serves to indicate that unequal rates are oftentimes compelled between competing railroads, in order to prevent a shorter line from securing all of a certain traffic and thus to break down competition, the surest guarantee of cheap transportation:

There are now three competing lines between Lansing, Mich., and the western terminus of the New York Central Railroad. The latter road forms an eastern connection of all these three competing lines, and evidently it must remain neutral with respect to the traffic they bring to it. The distance from Lansing to Boston via the South Shore Road is 927 miles, while via Detroit and the Great Western Railway it is only 818 miles, (109 miles less.) If the same rate per ton per mile were charged on both lines, the longer line would charge 13 per cent. more than the shorter line. In that case the longer line would not be able to secure any part of the traffic. In order to compete for the traffic, the longer line can charge no more for the entire distance from Lansing to Buffalo than the shorter line. The New York Central can get no *more* from one line than from the other for the same service from the same point without discriminating against the one and in favor of the other. The adjustment of charges west of Buffalo is as follows: The roads from Detroit to Buffalo should receive the same compensation as the Lake Shore Road from Toledo to Buffalo. Circumstances governing the through traffic compel equal charges from Detroit and Toledo to competitive points East. The result is that, in order that the through rate from Lansing to the East may be equal, the shorter line from Lansing to Detroit must receive the same as the longer line from Lansing to Toledo.

Virtually the line from Lansing to Detroit is allowed for 194 miles, while the *actual* distance is only 85 miles. At first glance this irregularity may seem to be an unjust discrimination against the line from Lansing to Toledo, but another important fact must here be taken into consideration. The joint or agreed rates of both roads from Lansing to Toledo and Detroit are necessarily the same for all "local traffic;" *i. e.*, commodities shipped from Lansing to the Toledo and Detroit markets either to be manufactured or sold at these points. In order that these two markets may stand on

an equal footing in the New York and Boston markets, and at common points throughout the Atlantic seaboard, the Lake Shore and Michigan Southern Railroad must carry freight at the same rates to Buffalo as are charged from Detroit to Buffalo, and of course receive much less *per ton per mile*, the distance from Toledo being greater.

Thus the merchants of Detroit are placed upon an equal footing both with respect to the supply at Lansing and the demand at eastern points.

The foregoing illustration shows that certain discriminations are sometimes necessary, in order to prevent other discriminations which would be destructive of important commercial interests.

The discriminations complained of in the Western States relate chiefly to "local rates," and are the proper subjects of inquiry and of relief by State authorities. Already the question has received the earnest attention of the legislatures, of the courts of justice, of railroad commissioners, and of others whose attention has been called to the subject from duty, from interest, or from the force of personal inclination. Many unjust discriminations with respect to freight rates have undoubtedly been made ignorantly by managers of railroads, from the fact that they had no knowledge of the cost of performing the various classes of service on the roads intrusted to their care. A few able men in this country have investigated the economy of transport by rail, and other important conditions which necessarily exert an influence in determining freight-charges. These men have pursued the subject in a thoroughly scientific manner, and have brought to the task great ability and patient research. It is their opinion that many freight-tariffs have been framed by railroad managers in violation of economic and commercial principles. This was especially the case during the first twenty-five or thirty years of the history of railroads.

The subject of discriminations is perhaps the most complex and difficult one in the entire range of railroad management and regulation. It is essentially a question of details, since each case or class of cases must be determined upon its own merits. The conduct of railroad affairs having become so intimately connected with the social and business interests of the people, discriminations and other abuses must be corrected gradually in the ordinary course of judicial proceedings, by regulations established by the railroad companies themselves, by such legislative action as may be taken as the result of a careful study of the whole subject in all its bearings, and by the establishment of customs commanding popular approval. Perhaps a safe guide in efforts to mark the line of distinction between just and unjust discriminations may be drawn from the following opinion of an English court as to the general rule which should prevail in deciding whether certain restraints upon trade resulting from railway combinations are reasonable or unreasonable:

We do not see how a better test can be applied to the question, whether reasonable or not, than by considering whether the restraint is such only as to afford a fair protection to the interests of the party in favor of whom it is given, and not so large as to interfere with the interests of the public.

This opinion has been re-affirmed in a leading case in this country.

Public sentiment, while ever sensitive of every apparent inroad upon private rights, will undoubtedly sanction the extension to railroad companies of the largest possible immunities and privileges, consonant with sound views of public policy and with those rules of law touching the rights and duties of common carriers, which have become established by the custom of centuries.

A long period elapsed before the people of the Western States turned from an enthusiastic desire for the promotion of railway projects at almost any sacrifice and by means of almost any practicable expedient, and came to regard railroad managers almost as public enemies and the interests of railway stockholders as necessarily antagonistic to their own. But unjust discriminations, exorbitant charges, the misappropriation of the proceeds of land-grants and other aids contributed by the people of the States, the corruption of legislative bodies, and the irritation caused by the reckless and offensive manner in which complaints and protestations were met by railroad officials and servants, produced their natural effect. The outburst of popular indignation finally came, and the promoters and managers of the railroads were brought to realize a fact which had been demonstrated time and again, that a great enterprise, touching the public interests at many vital points, cannot be conducted in disregard of public sentiment. The outbreak was marked by that indignant and fiery zeal with which a free people always resist the encroachment of real or fancied oppression. When public sentiment was on the side of the railroads, the people were too lax in the matter of restraints; and when the time for retribution came, the opposition was, in many cases, wild and unreasonable.

The railroad managers, whose duty and interest it was to furnish the information necessary for arriving at a knowledge of the whole question, were responsible, in a great degree, for the errors committed through ignorance. Perhaps the mistakes committed on both sides were, in the nature of things, unavoidable in the development of a knowledge of the true relations of the railroads to the state.

EXPEDIENTS PROPOSED OR ADOPTED FOR THE REGULATION OF RAILROADS.

The opinions entertained in regard to the relations which the railroads sustain to the state differ very widely. The subject has been much debated between the advocates of the railroad interests and the advocates of the public interests. It has been held on the one hand that a railroad company is endowed with the absolute right to use its franchises and properties without any reference whatever to the public interests, and that its power to regulate freight-charges is one with which the state can in no manner interfere; or, in other words, that a railroad is subject to no other legal restraints than those which apply to the operations of a cotton-factory or to a manufactory of boots and shoes.

On the other hand, the extreme view has been held—

That railroads are public highways; the title *vested* in the corporations, *but vested in trust for the State;* that the companies are merely the agents of the State, for the operation and management of these great highways; that the money invested by the companies as compensation for lands condemned or right of way purchased, and to build, equip, and operate the road, is regarded as consideration paid to the State for the franchise conferred by the State upon the companies.*

These diverse views as to the relations of the railroads to the State have led to widely different opinions as to the nature and limits of the expedients which should be adopted for the prevention and correction of abuses. The extreme advocates of the railroad interests hold that the evils complained of are inseparable from the system, or that they are of such a nature that they will work out their own cure, and therefore that the principle of non-interference should mark the policy pursued by the Government towards the railroads. The extreme advocates of the right of the state, on the other hand, go so far as to assert that the state should exercise an almost absolute control over the railroads through executive supervision.

In England several stringent methods of "regulating the railroads" have been advocated, but never adopted. In some of the countries of Continental Europe, the plan of a rigid executive supervision over the railroads has been practiced almost from the beginning. This interference embraces a general oversight of roadway, equipment, and traffic.

In two or three of the countries of Europe the government has gone so far as to construct or otherwise possess itself of certain of the more important lines, for the purpose of regulating rates on the rest, through competition. The German government has advanced to the extreme policy of adopting measures toward securing the ownership and control of all the railroads in the empire.

The measures which have been proposed or adopted in the United States for the regulation of the railroads relate both to matters of a police nature and to those of a commercial bearing, such as the prevention of unjust discriminations, exorbitant charges, and combinations, or other internal arrangements supposed to be in opposition to the public interests.

(*a*) *Police regulations.*—The power and the duty of the Government to establish and enforce proper police regulations over railroads are unquestioned, but the extent to which this power is exercised must generally depend upon the degree of care exercised by railroad companies in regard to the protection of life and property, and to matters relating to the comfort and convenience of travelers. Evidently the railroad companies can, through their own agents, officers, and servants, attend to all these matters much more intelligently and effectively than can the State, through its police-officers, its courts of justice, or its railroad commissioners especially charged with the enforcement of laws relating to such

*Speech of Hon. Matt. H. Carpenter, at Ripon, Wis., September 16, 1874.

matters. The duty of the State, however, to enact proper laws and to see to it that their provisions are observed, and thus bring to bear in a direct manner the power of public opinion, is none the less imperative.

Widely different views prevail as to the limits of the supervision which should be exercised by the State in regard to matters of police, and also as to the nature of the regulations which should be adopted. The police regulations which would be deemed sufficient in one of the sparsely-settled Western States would be quite unsatisfactory in the densely-populated State of Massachusetts. The jurisdiction of the railroad commissioners of the various States, relates chiefly to matter of a police nature.

Police regulations embrace a great variety of subjects, among which may be mentioned suitable fences along the lines of railroads, cleanly and commodious passenger-stations, the safety of bridges, the proper condition of road-bed and superstructures, the adoption of mechanical improvements proved to be of value for the protection of life and property, and the employment of proper persons to attend to duties pertaining to the public safety and convenience.

A sense of self-interest on the part of the railroad companies is undoubtedly the most effectual safeguard toward securing the ends of safety and convenience, and it is found that the companies generally adopt precautions in advance of governmental requirements, and to such extent as to obviate the necessity of any actual interference by the State. Almost all the instrumentalities for the protection of life and property on railroads and for securing the comfort and convenience of passengers and of the public generally have been adopted by the railroad companies from a sense of self-interest and without any reference whatever to requirements of law. A great deal of money has been expended by railroad companies upon experiments having this single object in view. On all the great trunk roads, and on many of the branch roads, comparatively little has been left to be attended to by the State. The tendency among railroad managers is constantly toward progress in respect to the condition of their road-bed, track, bridges, buildings, cars, and mechanical appliances of every kind, and toward securing the highest possible degree of efficiency and vigilance on the part of their officers and employés.

In addition to the matters above mentioned, all those facilities having in view the speedy transmission of goods, the express traffic, the transportation of freights in cars designed to meet the special requirements of traffic, the conveniences of terminal arrangements, both for passengers and for freight, and that most valuable improvement in travel by rail, the sleeping-car, have been introduced by individual or corporate enterprise, and without any governmental suggestion or interference whatever. The degree of perfection to which the railroads of the United States have attained constitutes them a proper object of national pride.

Some of the measures which have been proposed or adopted in

England and in this country for the purpose of regulating freight tariffs and the traffic of railroads will be briefly noticed.

(*b*) *Specific rates.*—The establishment of specific rates by the Government for the transportation of freights is, perhaps, the most crude of all the propositions which have been made for the purpose of regulating freight-charges. The enforcement of such a measure would require the traffic of all railroads to be placed under the immediate supervision and control of State officers. This method would probably lead to the entire ownership and control of the railroads by the State. It is hardly necessary to present any argument for the purpose of showing that such a policy would be ruinous to the railroad interests of the country, since it would destroy the stimulus to individual enterprise. This method of regulation has been condemned by all who have carefully investigated the subject.

(*c*) *Equal mileage-rates.*—This mode of regulation is subject to an objection just stated in regard to specific rates, viz, that it would involve a degree of supervision of railroad affairs detrimental alike to the railroads and to the public interests.

It has already been shown that distance alone is not a proper measure of the service performed by railroad companies. In certain cases the cost of transporting quantities *in bulk and in large quantities* 1,000 miles is less per ton than the cost of transporting like commodities 100 miles if *carried in packages and in small quantities.* If equal mileage-rates were applied to all the railroads, the effect would be to destroy competition and to subvert the existing order of commercial enterprise. This is evident from the fact that the shortest line between any two commercial points would be able to secure all, or very nearly all, the traffic, as the lines of greater length would be unable to compete for traffic, although the longer lines might, on account of the greater magnitude of their traffic, more favorable grades, cheaper fuel, better management, or other circumstances, be able to transport freights at less cost. The establishment of equal mileage rates would revolutionize the present course of commercial movements by diverting trade from commercial cities now held by virtue of the lower rates to and from such points secured by competition and the less cost of moving large than small quantities of freight.

(*d*) *Maxima rates.*—The plan of regulating freight-charges and passenger-rates on railroads by the establishment of maxima rates is not subject to the particular objections which have been mentioned in regard to specific rates and equal mileage-rates, and it has been found in a few cases to be a protection against exorbitant rates. But the evils of discrimination and exorbitant rates generally lie within the limits of such maxima rates as it has yet been practicable to establish. This plan has been tried in Great Britain. The parliamentary commission of 1872 stated as their conclusions in regard to it that the rates are always fixed so high that it becomes sooner or later to the interest of the company to carry freights at less than the prescribed "maxima rates."

A few instances of the establishment of maxima rates may be adduced in order to show how far they generally exceed the average rates charged on the trunk lines.

In Pennsylvania the companies most restricted are allowed to charge an average of 4 cents per ton per mile. The average cost of transportation on the Pennsylvania Railroad during the year 1876 is stated in the last annual report of that company to have been only .582 of 1 cent per ton per mile. The average charges were .892 cent per ton per mile, or less than one-fourth the legal maximum rate.

The railroads of New Jersey are, by general law, authorized to charge 10 cents per ton per mile, whereas on the New Jersey division of the Pennsylvania Railroad the average cost of transportation during the year 1876 is stated to have been 1.562 cents per ton per mile. The average earnings were 1.737 cents per ton per mile, or only about one-sixth the legal rate. The six leading railroads of England are allowed to charge 6 cents per ton per mile, but the average charges on those roads are very much below this limit.

The maxima rates established for passenger-fares on the New York Central and Hudson River Railway are frequently referred to as an instance of the advantages of maxima rates. The division of that road from Buffalo to Albany is limited to 2 cents per mile, and the Hudson River division is limited to 2 cents in summer and 2½ cents in winter. The line of that road, however, passes through many populous towns and cities, and consequently it has a large passenger traffic, which, in connection with its enormous "through" and "local" freight traffic, enables it to carry passengers at a very low rate.

The following table exhibits the average cost and the average charge per ton per mile for the transport of freight on several leading roads during the year 1876:

Road.	Cost per ton per mile.	Charges per ton per mile.
	Cents.	*Cents.*
Pennsylvania	.582	.892
New York Central	.....	1.050
Lake Shore and Michigan Southern	.561	.817
Erie	.885	1.098
Boston and Albany	.956	.....
Louisville and Nashville	1.080	1.850
United Railroads of New Jersey	1.562	1.737
Philadelphia and Erie	.504	.776

(*e*) *Limitations of profits on capital.*—This method of regulation involves very great difficulties in practice. The principal objection is that it is liable to be evaded in many ways, and in the present state of knowledge of railroad affairs there seems to be no means of preventing such evasions. In view of the risk attending investments in railroad property it is found necessary, in order to secure the construction of railroads, to set the limitations of profits on capital at a very much

higher rate than is generally realized on investments. A limitation of 10 per cent. has been adopted in England, although money is there abundant at 3 per cent. The general railroad law of the State of New York limits the profit on railroad capital to 10 per cent.

The most serious objection to limitation of profits is the fact that it tends to eliminate the strongest incentives to the economical management of those railroads upon which it is possible to earn more than the legal maximum. This is of course detrimental to the public interests, since it tends to increase the cost of transportation.

The method adopted in France of dividing all profits above a fixed limit between the railroads and the state avoids in some measure the objections to an absolute limitation of profits, but a plan of this kind would, in this country, be exceedingly unpopular, since it would cause the state to become interested in the maintenance of high rates, and practically to levy a tax upon commerce.

While it appears to be generally conceded, both in England and in the United States, that it is impolitic for the government to prescribe the rates which shall be charged on railroads, or by any line of action practically to assume control over the freight-traffic of railroads, unless for the correction of flagrant and manifest abuses, yet the importance of maintaining at all times a certain degree of governmental oversight over them is conceded in both countries. There is a constant tendency toward wild and reckless competition in certain directions, as the result of contests between railroads, and a corresponding increase of rates on non-competitive or local traffic for the purpoes of making up the losses of mismanaged competitive traffic, This, as we have seen, may lead to such discriminations against the interests of particular cities or states as practically to work the confiscation of large amounts of property in commercial and manufacturing cities.

GOVERNMENTAL REGULATIONS ADOPTED IN THE UNITED STATES.

It is undoubtedly true that some of the expedients adopted for the regulation of railroads have been ill advised and in the face of economic principles, but the effect of such regulations is believed to have been, on the whole, salutary. In the light of experience, it is evident that the state cannot conduct the affairs of a railroad company as economically or as effectively as can the managers of the road acting solely in the interests of the proprietary. This is as true as that a man's best efforts cannot be brought out so long as he acts under any sort of duress; and yet the success of civil government depends largely upon the moral influence of restraints upon personal liberty, where such restraints become necessary for the protection of personal rights or for the maintenance of public order. In this view it is believed that the results of the governmental supervision over railroads, exercised in this country and in England, have been on the whole beneficial.

It is a much easier matter to point to the inconsistencies and defects

of the particular methods adopted by states for regulating the railroads than it is to discover the full extent of the advantages which have resulted from such measures. The moral effect of public vigilance alone exerts a wholesome influence. The very crudity of some of the remedial measures adopted has, perhaps, led to the more speedy correction of abuses and to the diffusion of useful knowledge in regard to the circumstances which environ the railroad problem. Although the regulations and restraints which have been adopted may have subsequently been set aside, yet they have had their desired effect, and the people have been brought to a better understanding of the relations of the railroad to the state and to the commerce of the country. Thus, many erroneous impressions in regard to supposed acts of injustice on the part of the railroad companies have been corrected. The railroad companies have also been led to a knowledge of their responsibilities and duties to the public and to realise the limits of their power.

As reformatory measures, the acts of legislatures have in a great measure effected the purpose for which they were enacted, although not always in the way intended. In some cases the railroad companies have been forced to explain their positions and to defend themselves by furnishing information of great value. The result has been that in several States restraints have either been relaxed or abolished. The opinions expressed by the railroad commissioners of the State of Wisconsin upon this subject are of special interest in this connection, as in that State the experiment of railway regulations has been carried to its furthest extent. The commissioners say:

> It is impracticable for the State to assume the actual management of railroads or to wisely determine the multitude of minor questions of policy constantly arising in this department of the public service. Surely there is no apology for the exercise on the part of the State of any power over corporations which can be safely and as wisely exercised by the corporations themselves. There is no principle of American government so thoroughly or so properly established as that which limits the province of legislation at all times and under all circumstances, to enactments for the general good, and which denies to government the right or the duty of unnecessary interference with private or public enterprise. * * * * * There can be no sensible reason given why * * * * that which has been termed the "barbarous thumb rule" should not be withdrawn as soon as the conditions are reached which would, through an enlightened public opinion created and sustained by complete business exhibits of the companies, establish mutual confidence between them and the people as to management.*

It is now quite generally conceded that laws for regulating rates are useful mainly for the prevention of exorbitant charges and unjust discriminations when the effective competition of rival lines does not exist, and for the correction of other abuses.

LEGISLATION BY CONGRESS IN REGARD TO RAILROADS AND COMMERCE ON RAILROADS.

The question as to the regulation of commerce among the States has been much discussed during the last four years. The principal

* Report of Railroad Commission for 1874.

points involved in the discussion are clearly set forth in the report of the Senate Committee on Transportation, presented to Congress in the year 1874. (Senate Report No. 307, Forty-third Congress, first session, pages 79 to 109 inclusive.)

Whatever may be the limits and the scope of the power conferred upon Congress in regard to interstate commerce, that power has thus far been exercised only to a very limited extent. It is sufficient in this connection to mention the acts of Congress which relate especially to railroads and to commerce on railroads.

1. The act of July 15, 1866, authorizing railroad companies chartered by the States to carry passengers, freights, &c., on their way from one State to another State to receive compensation therefor, and to connect with railroads of other States so as to form continuous lines for transportation of the same to the places of destination. This act was passed at the instance of certain railroad managers.

2. The act of October 1, 1873, by which Congress declared that "no railway within the United States, whose road forms any part of a line or road over which cattle, sheep, swine, or other animals shall be conveyed from one State to another, or the owners or masters of steam, sailing, or other vessels carrying or transporting cattle, sheep, swine, or other animals, from one State to another shall confine the same in cars, boats, or vessels of any description for a longer period than twenty-eight consecutive hours, without unloading the same for water, rest, and feeding, for a period of at least five consecutive hours, unless prevented from so unloading by storm or accidental causes." A penalty of from $100 to $500 is imposed in case of a violation of the provisions of this act.

3. That family of statutes relating to the construction of bridges across navigable rivers, and providing, among other things, that the width of the span on each side of the pivot pier of the draw shall be at least 160 feet, and that the next adjoining spans to the draw shall not be less than 250 feet.

The opinion of the Supreme Court of the United States, as recently expressed in certain important cases known as the "Granger cases," touching the limits of the control which may be exercised over internal commerce by the States and by the National Government, may be found on page 228 of the Appendix.

ATTEMPTS MADE BY STATES TO REGULATE THE RAILROADS.

It is proposed to notice very briefly the main features of the attempts which have been made in several of the States of this country to regulate the railroads.

New York.—A board of railroad commissioners was appointed in the State of New York in the year 1855. The report made by this board clearly presented the various evils which had been developed in the railroad system, both those affecting the internal management of railroads and those connected with their relations to the public.

Subsequently, the board of commissioners was abolished, and for many years the only supervision which the State has exercised over the railroads has been the requirement of certain prescribed returns, mainly statistical, in relation to the traffic, the roadway, and the financial affairs of the various roads. There appears to be good reason to believe that these reports, like those of other States, are prepared in a perfunctory manner, and that they are not in all cases reliable. The forms in use were adopted many years ago and they are somewhat defective.

The only limitations as to charges in the State of New York relate to passenger fares. The maximum limit for the roads of the State generally is fixed at 3 cents per mile.

The New York Central and Hudson River Railroad Company is limited to 2 cents a mile over that section of its road extending from Buffalo to Albany, and to 2 cents in summer and 2½ cents in winter over the Hudson River division from Albany to New York.

With respect to freight-charges, the railroads of New York are subject to no statutory limitations whatever, and it is believed that the limitations placed upon passenger-fares do not in practice operate as a restraint upon the various corporations.

Connecticut.—The State of Connecticut has a board of three railroad commissioners, whose duties relate to matters of a police nature and to such as affect the public safety and convenience. Railroad companies are required to make annual returns in regard to their doings and financial affairs. No attempt has been made toward the general regulation of freights and fares.

Massachusetts.—Prior to the year 1869 various laws had been passed in the State of Massachusetts having for their object the regulation of railroads with respect to matters relating to the safety, comfort, and convenience of passengers, the prevention of accidents at railway crossings, and other matters of a police nature. In the year 1869 a law was passed creating a board of commissioners charged with the general duty of attending to the enforcement of the existing laws relating to railroads. The commissioners were required to report annually to the legislature "the doings of the roads for the preceding year, with such facts, statements, and explanations as will disclose the actual workings of the system of railroad transportation, in its bearings upon the business and prosperity of the Commonwealth, and such suggestions as to the general railroad policy of the Commonwealth, or as to any part thereof, or as to the condition, affairs, or conduct of any of the railroad corporations of the Commonwealth as may seem to them appropriate."

The commissioners of Massachusetts have perhaps given more attention to the general discussion of the railroad problem than any other board of railroad commissioners in the United States, and the information and views which they have presented in their several annual reports and in other documents form an interesting contribution to the general fund of knowledge upon the subjects treated of. The specific

recommendations made by the commissioners have not in all cases been adopted in Massachusetts. After a careful investigation of the question as to the regulation of charges for transportation, the commissioners reported adversely to the plan in their annual report for 1872, and in their subsequent reports they have adhered to the position then taken.

The Massachusetts railroad commissioners have made special efforts toward securing correct and adequate returns from the railroads as to their doings and financial condition. The provision of law already quoted, requiring returns showing the actual workings of the system of railroad transportation, was found by the commissioners to be, to a great extent, disregarded. In their report for 1875, referring to the results of the different systems of book-keeping adopted by the various roads of the State, the discrepancies in regard to the cost of rolling-stock are declared by the commissioners to be so glaring as to be ludicrous. They also refer to gross errors in the returns annually presented to the public, in the form of tabulated statements compiled from railroad accounts. The commissioners further state that, until the year 1873, the Massachusetts returns seem to have been accepted as they were sent in, and published for what they were worth, without scrutiny or comment, and that *such returns will not bear the slightest examination*. In their last report they call attention to facts clearly showing that in certain instances railroad officers have falsified their published statements, both to the railroad commissioners and to their own stockholders, the unreliable character of which statements was not discovered until financial disaster compelled a disclosure.

In view of these facts, the commissioners submitted to the legislature at its last session a draught of a law "to secure greater publicity in the accounts of railroad corporations."

Among other things, the bill provides that the railroad commissioners shall prescribe a system upon which the books and accounts of railroad corporations shall be kept in a uniform manner; that it shall be the duty of the board of railroad commissioners from time to time to examine the books and accounts of all corporations operating railroads, to see that they are kept on the plan prescribed under the authority of the State, and authorizing the board to employ a person skilled in the methods of railroad accounting, whose duty it shall be, under the direction of said board, to supervise the method by which the accounts of corporations operating railroads are kept. The efforts of the commissioners in this direction are worthy of imitation in other States.

Minnesota.—Complaints regarding unreasonable charges and discriminations were made in the State of Minnesota soon after the railroads had extended far enough into the interior to prove their value as a means of conveying the products of the State to the various markets on the Mississippi River and on the great lakes. For several years the railroad question was very sharply debated. In 1871 a law was passed estab-

lishing a tariff of rates; also an act creating the office of railroad commissioner.

The governor of the State, in his message for 1873, called attention to the fact that the tariff-law of 1871 had thus far been disregarded by the railroads, and recommended the prosecution of a searching investigation and the adoption of more effective measures. In the year 1874 an act was passed creating a board of three railroad commissioners, to be appointed by the governor for the term of two years. The law also gave to the commissioners full power to acquaint themselves with the circumstances of the various roads and to cause suits to be instituted against corporations or persons violating the laws. The commissioners were also authorized to establish freight and passenger rates, and the rule of evidence was so changed as to throw the burden of proof upon the railroads in cases of complaints of violation of the rules and tariffs.

The general rules adopted with respect to rates were as follows:

(*a*) In all cases a less charge for a shorter than for a longer distance by the same train and in the same direction.

(*b*) No greater charge for handling freight at one station than at another.

(*c*) No greater charge for a given distance on one part of the road than for an equal distance in the same direction on another part of the road.

(*d*) No greater charge for handling freight belonging to one person than to another person at the same station.

(*e*) No greater charge for transporting freight for one person than for another, from the same point, in the same direction, and the same distance.

(*f*) No greater charge for hauling railroad-cars for one person a less distance than at the same time charged for such transportation for another person over a greater distance in the same direction.

(*g*) No greater charge for hauling railroad-cars from the same point in the same direction and equal distance for one person than for another.

The only exceptions to these rules were in the case of commutation and excursion tickets.

At the end of the year the commissioners reported that the schedules prescribed had been adopted by all the roads. Complaints were, however, soon heard from various parts of the State "that the very uniformity of the plan discriminated unfairly against certain parts of the roads and against the weaker roads." The complaint which appeared to have had the greatest force arose from the fact that the rates between Saint Paul and Minneapolis, where the density of the population and the consequently large traffic had, until the adoption of the new tariff, induced the roads to charge lower rates than for an equal distance on other parts of the same roads, were very considerably increased.

The general dissatisfaction with the provisions of the law and the fact that the business and credit of the roads had suffered very much, it

being a season of general depression of business in the Northwest, led to a change of public sentiment. The governor, in his message to the legislature in January, 1875, stated that "the evils resulting from letting the railroads alone have scarcely any present existence here." The law of 1874, which created a board with quasi-judicial powers and with the powers to regulate fares and freights, was accordingly repealed in March, 1875, after having been in operation for ten months. A new law was passed, creating the office of commissioner, to be filled by election by the people.

The duties of the commissioner now relate mainly to the collection of statistical and other information.

Practically the railroad question has been remitted to common-law proceedings, and the functions of the commissioner are confined to the collection and compilation of statistics. The discussions as to the rights of the railroads and of the people seem to have resulted in a better understanding and in sentiments of conciliation on both sides.

Illinois.—Complaints in regard to the subject of railway-transportation began in the State of Illinois as early as the year 1850. These complaints, as in other Western States, related mainly to discriminations in favor of certain persons and places, to exorbitant charges, and to the action of certain roads with respect to the management of their land-grants. Railroad managers, in many cases, appear to have been gluilty of oppressive and unreasonable exactions in the management of the interests intrusted to their charge. It appears probable that in many cases the wrongs imposed upon the people resulted from the inexperience of railroad officials more than from willful intent. At the time referred to, men were intrusted with important railroad interests who lacked the experience and natural fitness for the proper discharge of the duties devolving upon them. A great advance has, however, been made in this respect not only in Illinois but throughout the country.

The complaints made by the people of Illinois finally resulted in a popular demand for the adoption of statutory provisions for the purpose of correcting abuses.

The early charters granted to railroad companies in the State of Illinois contained no provision reserving to the legislature the power to amend, alter, or repeal them. These charters, therefore, came under the rule of constitutional law announced in the Dartmouth College case; a rule which operated as an inhibition against all legislative interference in the matter of rates and fares. A new constitution was, however, adopted in the year 1870, declaring railroads to be public highways, and imposing upon the legislature the duty of establishing reasonable maxima rates for railroad transportation. It also conferred upon the legislature the power to make laws for the purpose of prohibiting unjust discriminations.

In 1871 the legislature passed an act to prevent discriminations in the rates charged by the different railroads of the State for the transporta-

tion of freights. Under this law the roads were classed according to their earnings, the rates actually charged in 1870 being made the standard. A board of commissioners was created, charged with the duty of carrying the provisions of the law into effect. This law was entirely disregarded by the railroads of the State, and coming before the supreme court of the State upon appeal, it was pronounced invalid, upon the ground that it made *no proper distinction between just and unjust discriminations*. The presiding judge, in rendering his opinion, declared that the law violated the spirit of the constitution, inasmuch as it required the forfeiture of the franchises of railroads upon arbitrary and conclusive presumption of guilt, to be drawn from the proof of an act that might be shown to be perfectly innocent.

In May, 1873, another law was passed, prescribing what should be deemed *prima-facie* evidence of extortion and unjust discrimination, the burden of proof being thrown upon the railroad company. Under this law the railroad commissioners are required to prepare certain schedules of rates which shall be deemed reasonable until overruled in specific cases by a jury.

The workings of the new law have not been in all respects satisfactory to the people of the State, although it is believed that, on the whole, its operations have been beneficial. In their report for the year 1875 the commissioners say:

> We think the friends of what is called "railroad legislation" may congratulate themselves upon the progress that has already been made, and may confidently anticipate that, in the near future, railroad corporations, instead of having the right, as they claim, to regulate their own charges, *must*, like all other common carriers, submit to that which is fair and reasonable.

Wisconsin.—During the first twenty years of railroad construction in the State of Wisconsin, the people were deeply interested in the extension of railway lines for the development of the resources of that productive State. Like the people of Illinois and other western States, they paid little attention, however, to the importance of establishing safeguards against exorbitant charges, discriminations, and other abuses.

At an early day in the history of railroads in Wisconsin, extensive grants of land were made to corporations, and almost every privilege desired was accorded by the people. But the evils incident to the development of the railroad system throughout the West at last manifested themselves, and a change of public sentiment followed. The popular discontent finally culminated in the passage of the "Potter law" of 1874, perhaps the most stringent legislative enactment which has ever yet been adopted in this country.

The passage of this law appears to have been the immediate result of an increase in the freight-charges of several of the roads in the autumn of 1873, when, for the first time in three years, the products of agriculture had come up to the annual average. Behind this, however, was the popu-

lar discontent resulting from discrimination and extortionate charges and the profligate disposition made of the proceeds of land-grants and of aids of various sorts extended by the State, and by counties, towns, and individuals.

The Potter law embraced the establishment of maxima rates and the prevention of unjust discriminations. Provision was made for instituting summary proceedings, and severe penalties were denounced.

This law appears to have been subject to several serious objections, very clearly set forth in the report of the commissioners of Wisconsin for the year 1874, the first of these objections being that it bore very heavily upon the new roads. Since the amount of traffic upon a road is the most important condition of cheap transportation, evidently it would be impossible even to pay the operating expenses of a new road if freight-charges were limited to the rates prevailing on roads having a large and well-established traffic.

A second objection mentioned by the commissioners is that the law was not sufficiently elastic. The varying conditions of commerce obviously point to the necessity of a change in freight-tariffs corresponding with the fluctuations of trade, but the law made no provision of this sort.

Third, the law took no account of short distances. For example, the charge allowed for transporting a car-load of freight one mile was the same as for twenty-four miles.

Fourth, the law treated connecting lines as continuous, but was silent as to a division of earnings.

The various inconsistencies of the law are set forth by the commissioners, and they are also presented in several documents submitted to the Wisconsin legislature by the Chicago and Northwestern Railroad and the Chicago, Milwaukee and Saint Paul Railroad Companies. The commissioners themselves, after a very thorough investigation of the whole question of the governmental regulation of railroads, have reached the conclusion that the regulation of fares and freights by the State should be regarded rather as an expedient for the correction of abuses than as a permanent substitute for the management of railroads by officers in the employ of the railroad corporations. This view is clearly set forth in the following extract from the report of the commissioners for 1874:

> Surely there is no apology for the exercise, on the part of the State, of any power over corporations which can be safely and as wisely exercised by the corporations themselves. There is no principle of American government so thoroughly or so properly established as that which limits the province of legislation, at all times and under all circumstances, to enactments for the general good, and which denies to Government the right or the duty of unnecessary interference with private or public enterprise.

Subsequently the railroad law of Wisconsin has been modified in several important particulars.

A better understanding of the railroad question in the State of Wisconsin has resulted from the experience acquired under the Potter law. The information which has been gained has tended to correct many erroneous views, and the disposition manifested by the railroad companies to comply with the legitimate demands of the people, with respect to their commercial and industrial interests, has also tended very much to bring about a change in public sentiment.

Michigan.—The office of commissioner of railroads was established in Michigan by act approved April 10, 1873. This act required the commissioner, in his annual report, to offer such suggestions as he might deem appropriate, as to "whether a classification of freights can be made, and, if so, in what manner; also, whether any railroad corporations make any discrimination in the matter of freight-charges between points intersected by competing lines and points not so intersected, and what change should be made in the law to promote the interests of the railroads and of the public."

In the first report of the railroad commissioner, submitted December 31, 1873, the difficulties attending any attempt to prescribe rates are set forth. It was found that the operating expenses of three railroads had exceeded their gross earnings; that the net earnings of others had not equaled the interest on their funded debts, and consequently that such roads were gradually sliding into bankruptcy; and also that the average income, even of the most prosperous roads in the State, after deducting operating expenses, was only about 6 per cent. on the investment made in them. In consideration of these and other facts touching the different conditions affecting the cost of transportation on the railroads of the State, the commissioner reported very decidedly against the plan of regulating freight-rates by law, the opinion being also expressed that the State should rather seek to develop its railroad system by a liberal policy than adopt any plan of restrictive legislation which might tend to check the construction of new lines. In each of his subsequent reports the commissioner has adhered to the recommendations made in 1873. The State has never yet adopted any law limiting freight-charges.

The duties of the commissioner relate chiefly to matters of a police nature, especially to those pertaining to the safety and convenience of travel and transportation. He is also charged with the important duty of collecting information as to the operations and the financial status of the various roads of the State. Such information and facts, presented by the commissioner as the result of his general investigations of the railroad question, have tended to throw much light upon the subject. The moral effect of this information, and of a knowledge of the effects of restraints upon railroads in States where restrictive legislation has been adopted, has tended to prevent unjust discriminations and extortions. There appears to have been a steady reduction in rates, both on the main and on the branch lines of the State.

Ohio.—The people of Ohio have for several years taken a deep interest in the railroad question in that State. In the year 1867 measures were instituted for collecting the necessary information in order to arrive at a proper understanding of the subject, and the office of railroad commissioner was created. That officer was charged with the duty of attending to the enforcement of railroad laws, and especially to requirements in regard to the safety and comfort of passengers as well as to the obligations of railroads as common carriers.

The commissioner is required to present to the legislature annually a report embracing statistical and other facts in relation to the operation of the various railroads in the State, according to forms prescribed by law. The commissioner is also empowered "to examine into all violations of any of the laws of the State relating to railroads by any officer, employé, or agent of any railway company coming to his knowledge by complaint or otherwise, and, if true, to report the same in his annual report to the governor; and, further, he shall prosecute or cause to be prosecuted all violations of any of the laws relating to railroads."

The railroad commissioner, in his report for 1875, says that "this requirement is apparently mandatory, but, if so intended, subsequent legislation has in some cases ignored and in others nullified it." A civil engineer charged with the duty of inspecting bridges, cars, and the superstructure of the roads is employed under the general direction of the commissioner. The legislature of Ohio has passed laws forbidding discrimination by the charging or receiving of a larger sum for the transportation of freight than is charged by the same line for an equal or greater distance in the same direction for similar freight, (act March 11, 1872,) and by act of the legislature of March 30, 1875, maxima rates were established, as follows:

Passenger rates not to exceed 3 cents per mile for a distance of more than 8 miles, provided the fare shall always be made that multiple of 5 nearest reached by multiplying the rate by the distance, and for transportation of property not exceeding 5 cents per ton per mile when the same is transported a distance of 30 miles or more, and in case the same is transported a less distance than 30 miles, such reasonable rate as may be from time to time fixed by said corporation or prescribed by law.

Certain exceptions are made with regard to the transportation of coal, pig-iron, mill-stones, iron-ore, undressed stone, and lumber.

The commissioner, in his report for 1875, points to a very glaring defect in the law, namely, that it "only specifies a maximum rate per ton per mile, without reference to whether coal, ore, lumber, or the lighter and more valuable articles which of necessity cannot be carried so cheaply or economically."

It is believed that the railway question is becoming better understood in the State of Ohio, and that a more amicable feeling is growing up between the people and the railroads.

Iowa.—The railroad question has been one of great interest in the State of Iowa during the last five years, the complaints urged with re-

spect to discriminations, exorbitant charges, &c., being quite similar to those which have been made in other States. The principal source of complaint was that unjust discriminations were made between shippers. The published rates of some of the companies are said to have afforded no indication of the rates actually charged, except to occasional shippers. Special rates appear to have been made 40 per cent. below the published rates. Such practices were evidently in the face of well-established principles of law regarding the duties of the common carrier, and were calculated to paralyze legitimate trade.

In 1874 the legislature passed a railroad-tariff law, fixing the maximum rates for fare and freight, and prohibiting unjust discriminations. The schedule of rates was copied from the schedules adopted by the railroad commissioners of Illinois. Attention is called to the elaborate statement presented to this Department by Col. Milo Smith, of Clinton, Iowa, covering the whole question of railroad legislation in that State. (Appendix, page 92.) It is therein shown that the practical workings of the law, as applied to the commercial interests of Iowa, are entirely different from those which apply to the Illinois roads. The trunk-lines of the State of Illinois, lying mainly within the territorial limits of the State, are subject, both with respect to their local and through business originating in the State, to State regulation. The case is, however, quite different in the State of Iowa, the traffic being mainly between different States, and, as such, subject only to regulation by the National Government. This fact is clearly indicated by the following statement as to the proportion of the traffic of the various trunk-roads of the State, which is "local," and therefore subject to regulation under the law:

Roads.	Percentage of local traffic.
	Per cent.
Chicago, Burlington and Quincy Railroad	15 to 20
Chicago, Rock Island and Pacific Railroad	20 to 25
Chicago and Northwestern Railroad	23 to 27
Illinois Central Railroad	15 to 20

It may be stated generally that only about 20 per cent. of the traffic of the principal railroads of Iowa is subject to the State laws regulating rates and fares. The companies may therefore recoup from their through or interstate traffic in whole or in part what they lose in consequence of the operation of the laws relating to their local traffic, the only restraint upon them being the effects which the competition of rival roads and of rival markets may exert in controlling through rates.

The Iowa railroad-tariff law of 1874 appears to have been very crude. Rates on branch lines were made the same as upon the trunk-lines, and the law in various ways produced discriminations. This led to subsequent modifications, designed to correct the mistakes made through inexperience in railroad legislation.

Missouri.—The State of Missouri, by act of the legislature approved March 29, 1875, adopted almost the identical provisions of the so-called "Potter law" of the State of Wisconsin. No attempt had been made prior to the passage of this law to obtain information in regard to the economic, commercial, or financial conditions surrounding the railroads of the State, a knowledge of which is necessary in order to determine the distinction between just and unjust discriminations.

There are certain discriminations made by the railroads of Missouri which are manifestly in the interests of the citizens of Missouri. For example, the discriminations made by roads leading to the city of Saint Louis, the chief commercial city of the State, in order to enable those roads to defend their own interests and those of the city against rates made by competing railroads tributary to rival cities in other States.

The act of 1875 provides for the appointment of three commissioners, charged with the duty of annually reporting to the legislature in regard to the economic, commercial, and financial interest of the various roads of the State, of attending to the enforcement of the laws with reference to matters of safety and police, and with the duty of prosecuting all violations of the State laws in regard to railroads. The commissioners are now earnestly investigating the whole subject of the relation of the roads to the State, and the results of their labors will be presented to the legislature at the next session.

In a special report made by the commissioners, dated February 25, 1876, it is stated that only five of the shorter roads in the State have complied with the terms of the law, the other roads maintaining the position that, by their charters granted prior to the adoption of the new constitution of the State, they are exempted from legislative control. The legislation of the State of Missouri touching the granting of charters to railroads, presents many legal complications, and the question as to whether the roads shall or shall not comply with the provisions of the recent law is yet to be determined by the courts. The commissioners have pointed to several glaring defects in the law, among which may be mentioned a failure to provide the proper means for the enforcement of its provisions.

New Hampshire and Vermont.—Railroad commissioners have been appointed in the States of New Hampshire and Vermont, charged mainly with the duties of collecting statistics and of attending to matters relating to the condition of road-way and equipment and matters of safety and comfort of passengers, and of annually reporting in regard to the condition of the various roads of the State.

Concluding remarks in regard to State regulations.—An obstacle to the efficacy of State regulation of rates and fares on railroads is presented by the fact that the chief commercial movements of the country are across State lines, and therefore not subject to the provisions of State laws, but fall within the jurisdiction of the National Government.

In a decision rendered in the year 1875, by Judge Dillon, in the United

States circuit court of the district of Iowa, the following opinion is expressed:

As our railroad system is made up of links, supplied under the authority of the several States, it may admit of doubt, in our present knowledge, whether a power in a State thus limited can be beneficially exercised; but this is a legislative problem, and not a judicial question.

The following views upon this subject were expressed by the railroad commissioners of the State of Wisconsin in their annual report for the year 1874:

It is clear to us that no satisfactory solution of the question of railway obligations to the public can be attained without a more intelligible basis of estimate than has hitherto been ascertained of the exact relations of these companies to those portions of their lines lying without the State.

This subject presents great and apparent difficulties of various kinds, and it points to a line of thought and of investigation which should command the attention of railroad commissioners, of legislators, and of others whose attention is in any way called to it. Perhaps the most important function of railroad commissioners at the present time is that of affording accurate information in regard to the relation of the railroads to the agricultural, manufacturing, and other interests of the States, and to the interests of the great commercial and manufacturing cities.

When all the more important facts of public interests in relation to railroad transportation in the United States shall have been collected and clearly presented, it may be confidently expected that there will be an end to such mistakes as have been made during the last ten years, and that so far as may be needful there will be judicious legislation tending to promote the interests both of the public and the railroad companies. It is to be hoped that through the adoption of uniform methods of collecting and presenting facts, the boards of railroad commissioners of the several States will attain their highest possible degree of efficiency and usefulness.

THE REGULATION OF RAIL-RATES THROUGH THE COMPETITION OF WATER-LINES.

The question as to the regulation of rail-rates through the competition of water-lines having been treated of very fully in the report of the Senate Committee on Transportation, (Report No. 307, Forty-third Congress, first session,) it is unnecessary to add much more in this report to what has been presented in other connections in regard to the competitive influence exerted by the great water-lines of the country.

The influence of the water-lines is most effective between points situated immediately upon them. At points remote from such lines their regulating influence is much less felt. The regulating influence of water-lines is also limited by the nature of the commodities transported. Heavy freights, which must be carried at the lowest possible rates, seek

the cheap water-lines. If the railroads compete at all for the carriage of such freights, they must do so at the same rates charged upon the water-lines. But with respect to a large class of the more valuable freights, and especially that class known as "express freights," the regulating influence of the water-lines is much less felt, rapid transit being a consideration of greater importance than the mere question of the rate charged.

The regulating influence of the water-lines appears, therefore, to be confined mainly to the mineral and agricultural products of the country, and to those commodities transported in large quantities, constituting the necessaries of life, commodities which are usually grouped in those classes of freights known as "fourth class" and "special."

As we have already seen, a large proportion of the internal commerce of the country is now carried on by direct transportion from points of shipment to points of destination and upon all-rail lines which do not come into direct competition with the water-lines. Still, as we have seen, the water-lines, with respect to a large portion of the internal commerce of the country, exercise a salutary, restraining influence over the rates charged for the transporation of large classes of commodities which are seldom, if ever, transported upon them, the mere possibility of competition upon a water-line or upon an indirect line formed by a water-line and a connecting railroad operating as a limit to the rates which can be charged upon the direct rail-lines.

These considerations emphasize the importance of providing such aids to navigation, and of making such improvements of interior water-lines, as may be proved to be of value with respect to the internal commerce of the United States.

In addition to what has already been said, this subject may be dismissed with a few remarks in regard to the two great interior water-lines of the country. The results of direct competition between the railroads and the northern water-line are clearly presented in charts Nos. 1, 2, and 3 at the end of this report, and have hereinbefore been fully described.

It is not possible to indicate the regulating power of the Mississippi River and its navigable tributaries over rail-rates in the definite manner in which the influence of the northern water-line has been exhibited. Only facts of a general nature can be presented upon this subject. All the railroads south of the Ohio River frame their freight-tariffs to competing points with special reference to the competition of the Ohio and Mississippi Rivers. The rail rates between Louisville and Cincinnati and points below, on the Ohio and Mississippi Rivers, fluctuate according to the stage of navigation on these rivers. When the rivers fall so low that navigation ceases, the rates are increased, and when the river rises to a stage favorable for the passage of boats and barges of the larger class the rates correspondingly fall.

It is difficult to estimate the possible effect of the competition of the

water-line formed by the Mississippi River, the Gulf of Mexico, and the Atlantic Ocean, toward regulating or limiting rates on the direct rail-lines between Saint Louis and the Atlantic seaports. This is evident from the following considerations:

First. About eighty-five per cent. of the grain and flour shipped East from Saint Louis is destined to interior points, and only about fifteen per cent. to Atlantic seaports. The competition or restraining influence of the southern water-line over rail-rates from Saint Louis toward the East is limited almost entirely to the shipment of grain and flour to Atlantic seaports for local consumption and for shipment thence to foreign countries.

Second. The tonnage of cargoes arriving at New Orleans being very much less than the out-bound tonnage, the principal part of the receipts of the round voyage of vessels trading at New Orleans is derived from freights on cotton, a commodity which yields more profitable rates than can possibly be obtained for the carriage of grain.

Third. The time required to transport freights from Saint Louis to Atlantic seaports by the way of New Orleans is usually about four times as long as the time required in the direct movement by rail.

Notwithstanding these limitations to the regulating influence of rates by water from Saint Louis to Atlantic seaports, vessels may occasionally be chartered at New Orleans for the transportation of freights to northern ports and to ports in Europe at very low rates. In case no other freight can be secured it is found more profitable to take a cargo of grain even at a very low rate than to depart in ballast. In such cases grain may be transported very cheaply from Saint Louis to the Atlantic seaboard by water. This marks the very important distinction between a regular and a sporadic movement of commerce. The rates occasionally obtained via New Orleans cannot, therefore, be compared with the rates on the direct all-rail lines to the east from Saint Louis, volume of traffic and regularity of movement being very important conditions toward securing cheap transportation.

These and other circumstances, hopefully of a temporary nature, have tended to repress the natural advantages of the New Orleans route. The events of the late war, the disrupted commercial relations at that port, and the obstructions to navigation at the mouth of the Mississippi River have for several years dwarfed its possibilities as a great shipping port. The lack of railroads connecting New Orleans with the railway system east and west of the Mississippi River has also had a depressing effect upon the commerce of that city, especially in view of the fact that rival commercial centers have secured such connections. The rapidly approaching completion of the improvements of the mouth of the Mississippi River, now an assured success, the construction of railroads into the interior, and the re-establishment of commercial intercourse will undoubtedly tend to attract shipping to New Orleans, for the purpose of

engaging in the carriage of the cereal products of the West to foreign markets.

From its geographical position the city of New Orleans possesses singular advantages for trade with the West Indies, Mexico and Central and South America; countries to which is exported from the United States a large amount of breadstuffs and provisions, and with which our commerce is steadily increasing. Already New Orleans has a considerable and growing commerce with these countries, and it appears probable that it is to this trade, more than to a grain-trade with the countries of Europe, that she must look for an upbuilding of her commercial interests. The increase of the trade of New Orleans with foreign countries, and the consequent reduction of rates on the ocean, will also tend to exert a regulating influence over the rates which may be charged on the trunk lines connecting the West with the seaboard.

THE REGULATION OF RAILROADS THROUGH THE COMPETITION OF ONE OR MORE RAILROADS OWNED AND CONTROLLED BY THE NATIONAL GOVERNMENT OR BY STATES OR CITIES.

The experiment of State railroads was made in this country at an early period in the history of railroad enterprises, but the roads thus constructed were subsequently sold or otherwise placed under the control of private corporations.

In almost every country the government has aided the construction of railroads by private corporations, but the experiment of governmental ownership and management of railroads has thus far been confined chiefly to Belgium and the German states. It has been found in these countries that the plan of governmental ownership and management can only succeed where the power exercised by the government through competition is so great as to operate as an effectual restraint upon all the principal lines constructed by private companies. The government must therefore obtain control of all the lines connecting the chief commercial centers. Where the competition of governmental lines is supplemented by laws restraining discriminations, the private lines are virtually placed under the absolute control of the government. The natural tendency of this system is toward the absolute ownership by the government of all the roads.

It was soon realized both in England and in the United States that private enterprise was generally equal to the demands for railway construction. In both countries the unbounded faith reposed in the possibilities of individual effort and a repugnance to embarking the government in enterprises competing directly with the industrial operations of the people, naturally led to the system of independent corporate ownership, with its gigantic energies and its manifest faults, and the line of public policy which is the expression of these sentiments has been

departed from only by the stress of apparent and clearly defined public necessities.

A few efforts have been made in this country toward the ownership and control of railroads by the State. The State of Michigan as early as the year 1837 entered upon the construction of roads under the management of commissioners, but during the years 1846 and 1847 the roads thus built were sold and passed under the control of private corporations.

The Western and Atlantic Railroad of Georgia was constructed by that State, and it is stated that while operated by the State it yielded a large net revenue. It is now leased for a term of years to a company which pays the State $25,000 per month and keeps the road and rolling-stock in repair. The company has complied with the terms of the law, and it is believed it has also realized a handsome profit beyond the amount paid to the State. This road is 132 miles in length and is almost wholly dependent upon through traffic.

Two or three other efforts toward the construction and management of railroads by the State have subsequently been abandoned.

During the early part of the year 1873, while the public mind was in a somewhat excited condition with respect to the results of the growth of the railroad power and the demand for cheap transportation was heard in all parts of the country, the railroad commissioners of Massachusetts proposed that the State should, by purchase of several connecting roads, secure the ownership of a through line from Boston to Albany, and enter into the business of operating that road, with the double purpose of securing a cheap avenue of commerce between Boston and the Western States and of regulating rates on competing roads, in the manner in which the railroads of Belgium are regulated through the competition of the state roads. The State of Massachusetts had expended about $14,000,000 in the construction of the Hoosac Tunnel and the short sections of road connected with the tunnel, and this great work was at that time approaching completion.

The commissioners presented their views and recommendations to the legislature in a report, exhibiting a careful study of the subject in its various economic and political aspects. But the legislature, after mature consideration, rejected the proposed plan, and placed the entire property of the State in the Troy and Greenfield Railroad, including the Hoosac Tunnel, under the control of a private corporation. This corporation is known as the Hoosac Tunnel and Western Railroad Company. Under this plan the State receives a moderate toll for the use of its lines.

Besides the aids extended by the National Government, States, counties, and towns have aided largely in the construction of railroads by means of subscriptions to stock, loans, and subsidies of various kinds, but the system of free railroads has generally been allowed to work out its own development under the laws controlling its existence.

The deflection of commerce from certain important centers of trade and of industry has led to certain efforts in this country toward the construction of railroads in the interest of particular cities, and for the regulation of rates on the great trunk lines. One of the plans proposed for the accomplishment of this latter purpose is that of

A DOUBLE-TRACK FREIGHT RAILROAD, ESPECIALLY DESIGNED TO ENGAGE IN THROUGH TRAFFIC BETWEEN THE WEST AND THE SEABOARD.

It is susceptible of proof that a double-track railroad employed in the carriage of freight to the full limit of its capacity would form a cheaper line of transport than any existing rail line. This fact is clearly recognized by persons familiar with the circumstances and conditions governing the economy of transport by rail; and there appears to be no doubt that when the commerce between the West and the seaboard shall have increased sufficiently to require the enormous capacities for transportation which would be afforded by such a road the demand will be met. Indeed, that demand has been, in a measure, supplied already by the New York Central Railroad Company in its "four-track line" from Buffalo to Albany. There are, however, well-informed persons who think that the facilities afforded by that company are somewhat in advance of the actual demands of commerce. The additional double-track freight-line is said to have cost about $25,000,000.

In the case of the company just mentioned the extraordinary capacity for transportation has not been provided especially to meet the demands of "through traffic" between the West and the seaboard, but mainly to meet the requirements of *an enormous mixed traffic*, embracing the carriage of freight and passengers—local and through traffic—and in order to meet the exigencies of fast and slow trains;—express and way trains.

Perhaps a general estimate of the necessity for the extraordinary track facilities provided by the managers of the New York Central Railroad may be formed from the following comparative statement collated from the last annual reports of the New York Central and of the Pennsylvania Railroad Companies:

Road.	Tons carried one mile.	Passengers carried one mile.
Pennsylvania Railroad	1,479,414,466	160,421,998
New York Central Railroad	1,404,008,029	338,934,360

The freight-traffic over the Pennsylvania Railroad appears to have slightly exceeded the freight-traffic on the New York Central Railroad, but the passenger-traffic of the New York Central Railroad is more than double that on the Pennsylvania Railroad. Evidently the New York Central Railroad requires more extensive track-facilities than the Pennsylvania Railroad.

The Pennsylvania Railroad Company is now pursuing the policy of gradually enlarging its facilities, in the way of tracks, at points where such additional tracks are, from time to time, found to be necessary, in order to avoid the detention of trains. On those portions of the road where the train movement can be accommodated by a double-track road, only two tracks are provided. On other parts of the line three tracks have been provided, and at certain points four and even more tracks have been laid, and additional tracks are constantly being provided at points where the concentration of traffic requires such increased facilities. It is probable that in the course of a few years this road will have four continuous tracks from New York and Philadelphia to Pittsburgh. The policy of providing track-facilities pursued by the New York Central and by the Pennsylvania Railroad Company does not therefore appear to differ very much. Several years will elapse, however, before the traffic on the roads west of Buffalo and west of the Ohio River will require four tracks, there being at the present time but one continuous line of double track from the seaboard to the city of Chicago, viz, the one formed by the New York Central and Hudson River Railroad, and the Lake Shore and Michigan Southern Railroad.

The tendency on the part of railroad-managers in all parts of the country has been rather to anticipate the public requirements by supplying tracks, equipment, and terminal facilities than to wait for the actual demands of commerce. Indeed, one of the most marked features of the strife which has been going on for several years between the rival trunk lines is the enormous increase in the capacity of those lines, both in equipment and in tracks. This has led to a reduction in rates, and to all the difficulties which have arisen respecting the maintenance of remunerative competitive rates. The supply of the facilities for transportation has far exceeded the demands of commerce, and the natural result has been that rates have fallen and that the value of the properties of the roads themselves has suffered an enormous depreciation.

The construction of a double-track freight-railroad has been advocated upon the ground that its great capacity would afford *cheaper* transportation than on any of the existing lines. But a fundamental condition of the economy of providing enlarged facilities for carrying on any enterprise is that the net income from the additional business secured shall exceed the interest on the additional capital invested for the purpose of attaining that object. A failure to conform the magnitude of the instrumentality employed to the work to be done has already led to the loss of hundreds of millions of dollars in unproductive railroad investments.

It may be readily shown that, under existing conditions as to the volume of traffic between the West and the seaboard, the cost of providing and maintaining the extraordinary facilities of a double-track freight-railroad would cause the cost of transportation upon it greatly to exceed the cost of transportation even upon some of the

existing single-track lines engaged in a mixed freight and passenger, local and through traffic.

Various estimates have been made as to the capacity of a double-track freight-railroad. For the purpose of the present consideration, the capacity assumed by Mr. C. P. Morehouse, assistant engineer of the Illinois Central Railroad, may be taken. Mr. Morehouse assumes the tonnage on such a road to be:

	Tons per annum.
Eastward	18,000,000
Westward	6,000,000
Total	24,000,000

As the result of a careful computation, he found that the amount of tonnage eastward would require a flow of traffic in an unbroken current of one hundred trains daily, each train consisting of fifty cars, the cars weighing eight tons each and carrying loads of twelve tons, an interval of ten minutes being allowed between the time of the running of trains; or, to employ the language of the gentleman above named, "allowing the operations of the road to flow on like the current of a mighty river, undisturbed by drought or by freshets." Evidently such favorable conditions cannot be realized in practice. Almost insuperable difficulties present themselves, not only as to the movement of so many trains, but as to the terminal facilities which would be required for such an enormous traffic.

But aside from the question of capacity, *the practicability of securing the requisite amount of traffic* is the condition which determines the whole question.

During the year 1875, the total east and west tonnage of the New York State canals, the New York Central Railroad, the Erie Railroad, and the Pennsylvania Railroad amounted to 26,216,000 tons. This, however, embraced *the entire through and local tonnage of the three railroads mentioned, and the entire tonnage, both local and through, of all the canals of the State of New York.* The total tonnage of the New York canals amounted in the year 1875 to 4,859,858 tons, whereas the through tonnage east and west amounted to only 1,354,203 tons. It is estimated that the entire through traffic between the Western States and the States of the Atlantic seaboard does not exceed 8,000,000 tons annually. This clearly indicates that the fundamental condition of cheap transportation on a double-track freight-railroad, viz, a traffic of about 24,000,000 tons, cannot be secured at the present time, nor until after the commerce between the West and the East has increased to several times its present volume.

There is no railroad company in this country which can afford to refuse any class of traffic, through or local, which will, under any circumstances, yield an absolute profit, or the carriage of which will yield better results than refusing it, volume of traffic being the most important condition toward securing cheap transportation.

At the present time the great through lines obtain the larger part of their net profits from their local traffic. This is illustrated by the relative amount of local and through traffic on the Pennsylvania Railroad:

Ton mileage of through freight	484,043,840
Ton mileage of local freight	995,370,626

Not only does the local traffic of this line and of the other trunk lines greatly exceed the through traffic, but the rates which are realized from the former greatly exceed those which can be obtained for the latter.

A single-track road operated by the aid of the telegraph has a very large capacity, and there are comparatively few even of the so-called "trunk lines" which have a traffic large enough to warrant the expense of a double track.

If the double-track freight-line of the New York Central Railway shall prove to be a source of profit, its success will be due to the following exceptional advantages: *First.* That it has the most remunerative local freight traffic of any great trunk line in the United States. *Second.* That it has a larger passenger traffic than any other trunk line in the United States. *Third.* That it has the following valuable eastern connections or feeders, viz, a double-track line from Albany to New York, the Hudson River from Albany and from Athens on the Hudson to New York City, and railroad connections with all parts of the New England States by the Boston and Albany Railroad, and the Hoosac Tunnel lines. *Fourth.* That it has a number of tributaries or branches to its main line which bring to it a large amount of traffic. *Fifth.* That it has an immense lake commerce tributary to it at Buffalo; and, *Sixth.* That by means of its western rail connections, the Grand Trunk Railway, the Great Western Railway of Canada, the Canada Southern Railway, and the Lake Shore and Michigan Southern Railway, and the connecting lines of those roads, there is drawn to it a large share of the commerce of the Western States.

It has been supposed that a new line, so constructed and operated as to afford cheaper transportation than any existing line, would secure the larger proportion of the entire through traffic between the West and the seaboard. This is believed to be an error. There are certain geographical limits to the traffic-interests of each transportation-line, limits which are determined by the location of the line itself, the number, extent, and location of its connecting lines, and the nature of the combinations and agreements which it can enter into with other lines.

That a new trunk line, supplying facilities for cheaper transportation than any known line, would operate as a regulator of rates on other lines, is undoubtedly true, but each of the other lines and their branches would also be able to secure a share of the through traffic within certain geographical limits. This fact is illustrated by the competition existing between the lake and canal route and the various trunk lines connecting the West with the seaboard. The water-line is the cheapest route of all, and it operates as a valuable regulator of rail rates; but, notwith-

standing this fact, during the year 1876, 83 per cent. of all the grain which reached the seaboard cities was transported on railroads and only 17 per cent. was transported on the Erie Canal.

The facts as to the volume of traffic and the very low rates which have prevailed during the last two years prove that no new line can be sustained *upon through traffic alone.*

In the foregoing statement an attempt has been made to point to the impolicy of constructing a double-track freight-railroad *at the present time*, mainly for the purpose of affording cheap transportation for the surplus products of the West, or, in other words, for the purpose of transporting an amount of through traffic which cannot be secured. It is not to be inferred, however, from considerations such as these, that *no new trunk line* should be constructed, either in the interest of any Atlantic seaport, of the section of country along its line, or of producers in the Western States. On the contrary, the fact is clearly appreciated that the development of the vast resources of this country will not only require new trunk lines, but also many lateral lines, until every center of local trade is placed within reach of the facilities of transportation by rail. Additional trunk lines will be required, whose interests shall be closely identified with the interests of their termini. Such roads must, however, be constructed upon well-established economic and commercial principles touching the adaptation of means to ends. Every road constructed with due regard to these considerations may become a source of profit, not only to its proprietors, but to the section of the country in which it is located, although its aggregate traffic may be *far below its maximum capacity.* The managers of every new railroad must aim to secure traffic of all kinds and from every available source, even if such traffic yields but a very small margin of profit beyond the actual cost of hauling and handling, and the enlargement of facilities must never be far in advance of the demands of the traffic. Under such a policy, the time may come when a double track will be required, and the highest development of railway enterprise yet realized will have been reached when the traffic shall have attained a magnitude requiring the enormous capacity of *a double-track line exclusively for the transportation of freight.*

THE CINCINNATI SOUTHERN RAILWAY.

The construction of the Cincinnati Southern Railway by the city of Cincinnati is an enterprise which has commanded public attention, from the fact that it is an effort made by a commercial city for the purpose of defending its interests against the competition of rival cities. This road extends from Cincinnati to Chattanooga, Tenn. Cincinnati has, for many years, carried on a large and very profitable commerce with all the States lying south of the Ohio River and south of the southern boundary of the State of Missouri, the avenues of this commerce at the present time being the Ohio and Mississippi Rivers and the railroads which have been

constructed from various points on those rivers south and west. The principal southern railway connections pass through the city of Louisville, and embrace the Louisville, Nashville and Great Southern Railroad, the interests of which road are intimately identified with the interests of Louisville, the chief commercial competitor of Cincinnati for the trade of the States south of the Ohio River. The importance of a direct southern communication was appreciated by the people of Cincinnati for several years. After a long struggle the right of way was secured through the States of Kentucky and Tennessee, and the road is now far advanced towards completion. It will connect at Chattanooga with railroads radiating into all parts of the South Atlantic and Gulf States. The facts in regard to this line have been mainly furnished to this Department by Mr. Sidney D. Maxwell, superintendent of the Cincinnati Chamber of Commerce.

The Cincinnati Southern Railroad is 336 miles long, and is being constructed by the city of Cincinnati in its municipal capacity, through a board of five trustees, under the authority and provisions of an act of the legislature of the State of Ohio. Its control, in the interests of Cincinnati, will be provided for and protected under the form of management which may hereafter be adopted. The road, when completed, will form a connecting link between a large number of lines at both its termini, with all of which, important traffic-arrangements can, under proper management, be made. The gauge of the road is *five feet*, which is the gauge of nearly all the roads south of the Ohio River. It is believed that a branch line will soon be constructed to Knoxville, Tenn., where a connection will be formed with the Virginia and Tennessee Railroad, and also with the railroads of North Carolina and South Carolina by means of roads already projected from the seaboard. It is also expected that other lateral lines will be constructed.

The north-bound freights over this road will embrace cotton, rice, sugar, molasses, tobacco, hogs, cattle, fruits, timber, coal, iron-ores, pig metal, copper, tin, lead, zinc, and other mineral products of the South, together with such merchandise as may be received from South America and the West Indies through South Atlantic and Gulf ports. The south-bound freights will consist principally of the extensive and varied products of Cincinnati industry, and of the manufactures and agricultural products of the adjacent country, embracing the entire State of Ohio.

It is believed that the tonnage of south-bound freights will predominate. The Louisville and Nashville Railroad, which is situated similarly to the Cincinnati and Southern Railroad, carries about seven tons of south-bound freights to four tons of north-bound freight. It is believed, therefore, in view of the rapidly-increasing movement of cotton overland from the Gulf States to the North Atlantic States, that the available car-space will naturally lead to the development of a large cotton traffic.

Heretofore the most profitable commercial movements developed by

the railroad system have taken the general direction of the parallels of latitude. It is believed, however, that during the next twenty years there will be a rapid development of traffic in this country over roads in the lines of the meridians.

The practical question as to the feasibility of constructing any new line is, *Will it pay?* Many roads have been constructed which have yielded a fair rate of profit on the capital invested in them, even where the traffic did not require one-fourth of their full capacity.

But there is another consideration of very much greater weight, which has led the people of this country, through individual subscriptions or through aid extended by cities, by States, and by the National Government, to promote the construction of railroads, and that is *the development of commerce and the enhancement of the value of property along their lines and at their termini.* In the highest sense railroads are productive enterprises, and even in cases where stockholders have lost their entire ventures, the increased value of property adjacent to their lines and the development of commerce have amounted to far more than the total cost of construction.

A new railroad connection naturally brings to a commercial city a large trade through the development of local traffic and by securing to its commercial interests an ally bound to it by the tie of self-interest.

The traffic which may be secured by the construction of the Cincinnati Southern Railway will embrace all the business which its management may be able to secure by means of connections and combinations of various sorts formed with the railroads extending into all parts of the South Atlantic and Gulf States, and the trade which the merchants and manufacturers of Cincinnati may be able to develop, at all points, from the Ohio River to the Gulf of Mexico.

The strength of a commercial city is limited by the geographical extent of its competitive influences, and the people of Cincinnati appear to have appreciated this fact in their efforts to secure an independent southern connection. The results of their new enterprise will be regarded with great interest.

LAND-GRANTS AND OTHER FORMS OF AID EXTENDED BY THE NATIONAL GOVERNMENT FOR THE CONSTRUCTION AND MAINTENANCE OF HIGHWAYS OF COMMERCE.

Prior to the period of railway construction in the United States, the development of that vast and fertile area of the national domain lying west of the Alleghany Mountains was confined to comparatively narrow limits within the territory bordering upon the lakes, the Mississippi River and its navigable tributaries, and certain canals in the States of Ohio, Indiana, and Illinois. The development of the Western and Northwestern States is, however, due mainly to the construction of rail-

roads, 34,400 miles of road having already been constructed in these States.

The advantages to be derived from the construction of railroads in the Western States were clearly foreseen during the very infancy of railway enterprises in this country. The fertility of the soil, the favorable topographical features of the country for railway construction, and the faith even at that early day entertained in the possibilities of travel and of transport by rail led to a demand for railway construction, not only to meet the requirements of existing commerce, but for the purpose of inviting immigration and of developing virgin soils. There being at that time no available capital in the Western States and Territories for carrying forward enterprises of such magnitude, the construction of railroads depended almost entirely upon aid from abroad, and even to this day a very large proportion of the capital invested in western railroads is held by capitalists residing in the older States and in foreign countries.

In the year 1850 the National Government inaugurated the policy of granting lands in aid of railway construction at the West, the system adopted being that of donating to the roads alternate sections of land. This policy was based upon two fundamental considerations, viz, first, (and the most important one,) that of inviting immigration; and, second, that the lands retained by the Government would be enhanced in value sufficiently to compensate for the lands donated to the companies. Both these expectations have been fully realized.

For nearly twenty years public sentiment very strongly favored the extension of the railway system throughout the Western States and Territories at almost any cost and by the adoption of almost any practicable expedient. This sentiment found expression not only in grants of land by the Federal Government, but also in the extension of liberal donations, privileges, immunities, and aids of various sorts, by States, counties, cities, and towns throughout the West. Perhaps there has never been a measure of public policy which has commanded more general favor in this country than did that of donating the public lands in aid of the construction of railroads. In fact, for many years the people were more willing to grant lands in favor of railway construction than the projectors of such enterprises were able to avail themselves of the aid extended. This is indicated by the fact that at the close of the fiscal year ending June 30, 1876, *over four million acres of land granted for railroad purposes had reverted to the Government.*

It appears that at the close of the year 1876 there had been donated by Congress to other than Pacific Railroads 37,504,087 acres of land, of which only 33,700,629 acres had been patented, and that there had been granted to Pacific Railroads 150,281,766 acres, of which only 8,359,491 acres had been patented. Tables showing the quantity of land granted to each railroad and to each State may be found on pages 237 to 240 of the Appendix.

Besides the land-grants in aid of the construction of railroads, Congress has also authorized the issue of bonds of the Government, for the purpose of aiding in the construction of certain roads known as *Pacific Railroads.* The amount of these subsidies is presented in the monthly statements of the public debt of the United States.

The following statement is compiled from the statement for the month of December, 1876:

Principal outstanding	$64,623,512 00
Interest accrued and not yet paid	1,938,705 36
Interest paid, less repaid for transportation of the mails	25,075,710 96
Total	91,637,928 32

Estimating the value of all the public lands granted and actually patented at $1.25 per acre, it appears that the aid extended in behalf of railway construction at the West amounts to $52,575,150, which, added to the amount in the form of loans to Pacific Railroads, gives a total of $144,213,078. The granting of the immense subsidies in aid of the Pacific Railroads was dictated by political as well as commercial considerations.

The governmental policy of land-grants was designed to meet a great public exigency such as had never before presented itself in the history of any civilized nation. This was nothing less than the opening up to civilization and to commerce of a territory larger than all the countries of Europe, except Russia, combined, and surpassing those countries in the value of its resources of soil and mine and in its adaptation of climate to populous and enterprising States.

It is not surprising that mistakes were made in carrying out this line of policy which from the force of circumstances was tentative in all its features. In certain cases there was a failure to adopt proper safeguards for the protection of the public interests, and it is a matter of notoriety that a part of the proceeds from the lands granted and bonds issued was, through profligate and dishonest financiering, either squandered or misappropriated. Circumstances of this character at one time caused the name of "Pacific Railroad" to become almost a synonym for fraud and official corruption. Statutory provisions adopted for the protection of the public interests proved in certain cases to be ineffectual. This was due in some measure to the fact that the several States which acted as agents of the National Government in the distribution of lands failed to adopt proper safeguards for the faithful application of the grants to the purposes intended. But counties, cities, and towns, in their corporate capacities, also made serious mistakes in their haste to advance the construction of railroads.

The abuses of public benefactions at last aroused a sentiment of opposition to the policy of granting aid in any form to railroad companies, and it is probable that no further assistance will be extended by the National Government, unless it be for the purpose of developing unset-

tled territory or for the construction of additional railroads designed to connect the Pacific coast with the States of the Atlantic seaboard, and under conditions which experience has proved to be necessary for protecting the public interests. But the granting of public lands to railroads must in the nature of things soon come to an end from the fact that such lands have been very largely disposed of.

There has been little occasion for the extension of governmental aid in behalf of the construction of railroads in the settled States, private enterprise having in this respect outrun the demands of commerce. The policy of granting aid by the National Government for the promotion of railroad construction in the Western States and in the Territories must therefore be regarded as exceptional and temporary, such interposition being based upon the important object of opening up vast undeveloped resources and of paving the way for the march of enterprise. In the prosecution of this policy, the Government has simply taken a step in advance for the protection and encouragement of the pioneer.

The growing wealth and commerce of the States of the Pacific slope, and the importance of affording to that section of the country facilities for commercial intercourse with the eastern side of the continent suggest the importance of extending such governmental encouragement as will insure the completion of a Northern and of a Southern Pacific Railroad. Works of this nature were inaugurated under the patronage of the Government several years ago, but their progress has been arrested in consequence of results of the financial crisis of 1873. Both these enterprises now commend themselves to favor by important commercial and political considerations.

The evils incident to land-grants and other forms of governmental aid are now obvious to all, but the wisdom of the policy heretofore pursued has been fully vindicated by an immense increase of population and of wealth and by an unparalleled development of commerce throughout that vast and fertile domain which fifty years ago was occupied only by savage tribes. The results realized vastly exceed the value of all the donations and loans. In view of the fact that errors and abuses inevitably spring up in the course of the development of every new public enterprise, it is a subject for congratulation that the net results of the policy of land-grants have been so grand already, and that there is the promise of even larger results in the future.

Besides the aid extended by the National Government for the promotion of commerce and the development of unsettled territory, in the form of land-grants and the extension of its credit in behalf of the construction of Pacific railroads, Congress has also, from time to time, since the organization of the Government, contributed largely towards the improvement of rivers and harbors, the safety of navigation, and the construction of wagon-roads and canals. The value of all these aids, and the proportion which they bear to the amount of private capital

expended in the construction of railroads, are matters of public interest. It appears that from the time of the adoption of the Federal Constitution until the close of the fiscal year ending June 30, 1873, the Government had appropriated in aid of public improvement the following sums:

For improvement of rivers and harbors	$32,680,340
For light-houses, beacons, fog-signals, marine hospitals, and other aids to navigation and commerce on navigable waters	16,937,115
For construction of railroads, canals, and wagon-roads, including bonds issued to Pacific railroads	104,705,163
Estimated value of public lands granted in aid of the construction of railroads	52,575,150
Total aid extended to close of fiscal year ending June 30, 1873	206,897,768

The total expenditures of the Government in aid of the construction of railroads, canals, and wagon-roads, and for the improvement of rivers and harbors and securing the safety of navigation, *were, however, but five per cent. of the amount of the private capital expended in this country for the construction of railroads.*

The total amount contributed by the Government *in aid of railroads alone*, in comparison with the total cost of the railroads of the United States, as estimated by H. V. Poor, esq., of New York, was as follows:

Total amount of the contributions of the Government	$144,213,078
Estimated cost of the railroads in the United States	4,658,208,630

It appears, therefore, that the National Government had at the end of the year 1876 contributed *only three per cent. of the entire cost of the vast railroad system of the United States, all the rest being the contribution of private enterprise.*

Assuming, however, that the Government had been reimbursed for the lands granted to railroad companies by the increased value of the alternate sections retained, it appears that the net contribution of the Government to the entire railroad system of the country was *less than two per cent. of its cost.*

9. THE RAILROAD QUESTION IN FOREIGN COUNTRIES.

It has been impracticable since the organization of this office to enter upon any extended investigations of the railroad question in foreign countries. The facts embraced in the following statements relative to the railroad systems of the principal countries of Europe have been obtained from various sources, the principal one being a report to the British parliamentary committee of 1872, on Railway Companies Amalgamation, by Mr. W. R. Malcolm, Assistant Secretary of the Board of Trade. In certain cases the language of that report and of other publications is adopted without special reference to the authority. Many of the difficulties and abuses which have characterized the development

of the railroad system of the United States have been encountered in other countries. In the various countries of continental Europe, the relations of the railroads to the state differ widely from those which exist in this country. These differences arise from peculiarities of social and political institutions, and from the geographical features and commercial characteristics of the several countries.

GREAT BRITAIN.

The railroad system of Great Britain resembles that of the United States, in certain important particulars. In both countries the railroads have been constructed under the principle of independent corporate ownership, and this feature of their existence has in both countries given rise to the building of competing roads, to combinations and consolidations, discriminations, exorbitant charges, exploits in railway financiering, abuses in railway management, and mistakes in railway legislation.

Notwithstanding the errors and abuses of railway construction in England and in the United States, the development of the railroad system in both countries has been more rapid than in any other country on the globe.

From the very beginning of railway construction, the English people, like the people of the United States, have entertained an apprehension of the possible evils of monopoly, resulting from a system of transportation in which the safeguard of free competition among common carriers is eliminated. But the evident possibilities of railway transportation begat an enthusiastic approval of almost every project for the extension of the system, and this sentiment has led to a patient endurance of many apparent abuses. The British people did not, however, like the American people, allow their railway system to run alone from the beginning. Instead of waiting until a great public danger had aroused their indignation against the errors of corporate management, they began at a very early day to investigate the relations of the railways to the state, the nature, extent, and probable result of abuses, the limitations which considerations of public policy should place upon the exercise of corporate rights, and the various economic and commercial questions involved in the new mode of transportation. Parliamentary committees and commissions were appointed for the purpose of inquiring into the whole subject, and officers of the government were required to lend the aid of their observations and study. Many well-informed persons have also in a private capacity aided in throwing light upon the subject.

In the year 1844 a parliamentary committee was appointed, of which Mr. Gladstone was chairman. That committee reported that "the effect of monopoly, both on the public directly, and indirectly on the railway companies, was to be dreaded and guarded against; and that with re-

gard to new lines, at any rate, the government and parliament ought to reserve certain powers to be exercised after a given time."

In pursuance of this recommendation, at the instance of the committee, the following statutory provision was enacted during the same year:

After fifteen years the treasury may buy any new railway for twenty-five years' purchase of the average annual profits for the preceding three years; but if the profits are less than ten per cent. the amount to be settled by arbitration.

The opinion was for a long time entertained by many that unless the state controlled the railroads the railroads would eventually rule the state. But the conclusions and recommendations of the parliamentary commission of 1872, in connection with the improved character of railroad management, touching publicity and accountability to the public and to stockholders, have tended to dispel many of the fears at first entertained. A better feeling has grown up, based upon a better understanding of the mutual interests of the railroads and the public, and the people of England seem to have arrived at the conclusion that, so long as the railroads refrain from practices obviously detrimental to the public interests, the government should interfere in railroad affairs only so far as relates to questions of the public safety and convenience and to matters purely of a police nature.

Some of the conclusions and recommendations of the parliamentary commission of 1872 are of especial interest in connection with questions of present interest in this country. The views of the commission in regard to the consolidation of lines ["amalgamations," as they are termed in England] are expressed as follows:

Few cases have been adduced in which amalgamations already effected have led to increased fares or reduced facilities; while, on the other hand, there is evidence that the most complete amalgamation which has hitherto taken place, viz, that of the Northeastern, has been followed by a lowering of fares and rates and an increase of facilities, as well as by increased dividends. Nor can it be doubted that some of the grievances complained of, especially in outlying districts, such as the want of system and power in the Welsh railways, and the failure to develop traffic on some of the Irish railways, would find their best remedy in amalgamation. What the case might be if amalgamations even more extensive than those now proposed should be allowed to take effect and if the United Kingdom should be districted between two or three companies, it is difficult to anticipate.

The "lowering of fares and rates" referred to was, in a great degree, brought about by the competition of water-lines, especially the transportation of goods coastwise, and by the competition of rival markets. The effects of the competition of markets, induced by the extension of trunk-lines and the consolidation of railroad interests, have perhaps been more striking in the United States than in England.

FRANCE.

Almost from the beginning of railroad construction in France the government has in a manner sustained a partnership relation to the railway corporations, and it has extended to them very largely the aid of

its credit. Every passenger time-table and every freight-tariff is submitted to the government for its approval. The government maintains a complete system of surveillance, having agents at every principal station in the country. The accounts of every company are open to the inspection of government officers, who make a yearly examination of them.

The concessions to railway companies are generally for ninety-nine years, at the end of which time the roads are to revert to the state. The government also reserves the power to purchase any of the lines after the expiration of fifteen years from the date of the original concession, upon certain prescribed conditions.

Until recently the construction of competing lines has not only been discouraged but absolutely prohibited, upon political and economic considerations. In the year 1859 the government partitioned out the country among six great companies, each of which undertook to construct a number of lines deemed necessary for the proper development of the railroad system. The companies being unable to carry out this plan of construction fast enough to meet the public demand for railway facilities, they applied to the state for assistance. A new classification was then adopted. The existing roads were classed as the *ancien réseau*, and the new lines were denominated the *nouveau réseau*, the government entering into new financial arrangements with the new lines.

The entire management of the railroads of France is under very close governmental supervision, the government being the arbitrator in all cases of dispute between the companies.

The government prescribes maxima rates, within which the companies exercise the right of making "special tariffs" and "through-rate tariffs," recognizing the justice of differential or discriminating rates upon the conditions of *quantity of freight* and *distance transported.*

In the year 1865 a law was passed which has introduced some very marked changes into the French railway system. Many of the departments and communes being unable to induce the companies to construct all the lateral or branch lines which were desired, the government allowed them to undertake the construction of railways themselves or to sanction their construction by private companies, subject to the approval of the government. The provisions of this law have resulted in a very considerable extension of the railway system of France. Under private corporate ownership these branch lines have, in certain cases, combined and formed through lines, competing both with the lines of the *ancien réseau* and of the *nouveau réseau.*

A spirit of wild railway construction has prevailed during the last six years, and it appears likely to culminate in a railway financial crisis, such as has marked the history of railroad progress in England and in the United States. The extension of the private or lateral lines seems likely to give rise to all those difficulties which constitute "the railroad problem" in England and in the United States.

BELGIUM.

Since the construction of railroads began in Belgium, the government has adopted two different lines of policy. The first roads were undertaken by the government. After having constructed some of the most important lines, the government allowed private companies to undertake the construction of branch lines and the general development of the system. In 1850 it was found that the State had constructed 64 per cent. of the railroad mileage and that the companies had constructed 36 per cent. In 1860, 67 per cent. of the total mileage of the railroads of the kingdom had been built by private companies and only 33 per cent. by the State. The government did not, as in France, follow any particular line of districting. Since 1860 another change has taken place. Competing lines have been constructed and a struggle for traffic between rival lines has been going on. The government has in some cases entered into agreements with the private lines for the maintenance of "competitive rates," and it has even gone so far as to pool earnings from competitive traffic. Some of these combined private lines have become formidable competitors of the government lines.

Thus far the regulation of rates has been effected chiefly through the competition of the government lines, and also, it is believed, in a very great measure, through competition between the private lines themselves.

Every company is required to give fifteen days' notice of any change in its tariffs. The question of rates and fares seems to have finally settled down upon commercial principles.

The government has from the beginning sustained a thorough investigation of the various economic and commercial questions involved in its railroad system.

HOLLAND.

The system of canals in Holland which permeates almost every part of the country affords very great advantages for cheap transportation, and in consequence the construction of railroads has not progressed very rapidly. The principal lines of the country have been constructed by the government, but these lines are now operated by private companies.

GERMANY.

The powers of the government in railway matters have been greatly modified under the constitution of the German Empire. The construction of railroads and the general determination of questions in regard to commerce on railroads are now considered to be matters of imperial jurisdiction. It is maintained that such governmental supervision and control is not only desirable for the prevention of abuses which naturally arise under unrestricted railroad construction and management, but from political and military considerations.

At the commencement of the railroad system in North Germany, the

principle of competition was distinctly renounced, the French system of granting to separate corporations the exclusive right of constructing railroads within certain territorial limits having been adopted. The railway companies of North Germany have heretofore enjoyed a considerable degree of freedom in the matter of freight classifications, and in making differential or discriminating rates they have been allowed considerable liberty.

The railroad companies are required to give sufficient publicity to all rates prior to their enforcement.

The constitution of the German Empire requires that all railroads shall be administered as a part of one uniform system, and makes it incumbent upon all the companies to make arrangements for the exchange of freight and passengers, or, in other words, to enter into such combinations as shall afford the best facilities for the direct shipment of goods from one point in the empire to another without unnecessary transshipment or expense in forwarding. The government exercises a very minute supervision over all the operations of railroads: their finances, roadway, equipment, stations, and traffic. An officer is appointed for each company, styled the government director, whose duty it is to attend to the enforcement of the laws and regulations relative to railroads.

The principle of partial state ownership prevails to a considerable extent in the German Empire.

The railroad bureau of the German Empire has recently collected statistics of the railroads of the empire, exclusive of those in Bavaria, over which the empire exercises no control.

By this it appears that at the close of 1875 the figures were as follows:

	Number of roads.	Miles.	Gross receipts in 1875 per mile.
State railroads	15	5,637	$8,282
Private railroads worked by the state	10	1,864	9,880
Private railroads worked by the companies	45	7,361	6,832
Total	70	14,862	7,782

The kingdom of Bavaria has an independent railroad system, and since entering the empire it has completed the purchase of all its roads.

Within the last two years the purchase of all the railroads by the imperial government has been agitated, but as yet it is an unsettled question, Prince Bismarck and the advocates of the centralization of power favoring the measure, while the railroad interests and many well-informed commercial men take the opposite ground.

The opponents of the plan of ownership by the empire maintain that there would not be one-half the railroad-mileage that there is to-day had it not been for the construction of railroads by private enterprise, and they maintain that, whatever may be the defects and abuses incident to

private ownership, this system best attains the main object aimed at: the construction of roads. It appears probable at the present time that the imperial policy with regard to the purchase of the roads will be adopted.

Causes of irritation and of popular discontent, similar to those which have prevailed throughout the Western States of this country, have also been experienced in Germany.

The German mind naturally looks to the government for relief from all evils affecting the public interests. The empire may secure the ownership and control of all the railroads, but the acquisition will bring with it an enormous responsibility, and subject the government in manifold ways to adverse criticism.

One of the ablest opponents of the system of imperial ownership has declared that there is no man who possesses the gigantic power and breadth of view necessary to the performance of the duties of chief of the whole railroad system, and that a despotic control of the roads can only work evil.

The railroad question in other countries of Europe presents but few points of interest in addition to those already referred to in speaking of the railroad systems of France, Belgium, Holland, and the German Empire.

SOUTH AMERICA.

In almost all the countries of South America in which railroads have been constructed, the companies have received aid from the government by loans, or by the guarantee of interest on bonds. The principal roads of Peru were built and are owned by the government. All the South American governments are continually "regulating" the railroads, the people in all these countries adhering to the idea that they must look to governmental interference for the correction of all evils of a public character. Rail-rates are in most of these countries limited in the original charters. The companies are restrained from making large profits by the fear that the government will step in and cut down their tariffs of charges.

FULL AND RELIABLE RAILROAD REPORTS.

The importance of collecting statistical and other information in regard to the operations of railroads was fully appreciated both in England and in the United States at an early day. Manifestly, the first step toward protecting the public interests against the apprehended evils of the railroad system was to arrive at a proper understanding of the whole subject in all its economic and commercial bearings. Such information has accordingly been collected with great care and exactitude in England, by parliamentary committees and commissions, and by the statistical department of the board of trade.

A parliamentary committee was appointed in England in the year

1840 for the purpose of considering the relations of the railroads to the state, and of recommending such measures as might be deemed necessary. The practical results of their labors were almost exclusively confined to the recommendation of a superintending department of the government which should have no duty but that of requiring returns and of enlightening the public as to the condition of the traffic and of the rates for transportation. Returns in regard to British railways have been rendered annually ever since. From time to time these returns have been greatly enlarged and improved, and they now constitute an exceedingly valuable source of information. The knowledge thus afforded has been the means of correcting many erroneous views, and the railroad companies, knowing that their operations were matters of public information, have been much more guarded in their actions than have railroad managers in this country.

The managers of the railroads of Great Britain have been brought to realize the fact that in order to avoid hostile legislation it is best that they should aid the government in its efforts to arrive at a clear understanding of the railroad question.

For many years the railroads in the United States claimed and exercised almost absolute immunity from any sort of governmental supervision over, or of inquiry into, their doings or their financial condition. The privileges accorded to the companies in this, as well as in other respects, went to the verge of license. At last the people of some of the States in which the construction of railroads was farthest advanced, saw the necessity of compelling the companies to render certain annual returns as to their doings, their financial status, and other matters of public interest.

The commissioner system has been adopted in nearly all the Northern and Western States, and there is a general similarity in the nature of the returns required. These returns are, however, quite defective, a fact well known to the commissioners, who have instituted measures toward securing a unification of forms, and towards arriving at an agreement as to the nature and scope of the data to be collected. The greatest difficulty to be encountered is the force of habits and of methods of book-keeping adopted by the railroad companies during a long period of exemption from the requirement of rendering any account of their doings to the State.

Widely different views have been entertained by railroad managers as to the value of such statistics as may enable them to gain an exact knowledge, in detail, of their own experiences in the conduct of railroad affairs. Many important lines are operated simply upon the practical knowledge possessed by them in regard to the details of railroad affairs. The managers of other lines, however, collect elaborate statistics covering every branch of expenditure, and the line of policy pursued is largely dictated by such knowledge.

Railroad managers also differ widely in their views as to the policy of

publishing the facts known to themselves in regard to the economies, the traffic interests, and the financial status of the railroads over which they preside. The managers of many important railroads in this country have neglected to make public such information as is necessary to afford even to their own directors and stockholders a knowledge of the interests intrusted to their charge. Only a few of the trunk lines of the United States have as yet deemed it expedient or useful to publish information in regard to their doings.

The reports covering the subject of transportation on the Louisville, Nashville and Great Southern Railroad, prepared by Mr. Albert Fink, late vice-president and general superintendent of that road, stand by themselves for completeness and philosophical arrangement. These reports serve to throw light upon almost every question of a practical nature in regard to the business of that road, and clearly indicate what can be done by other companies. So important did Mr. Fink consider the collection of this information, in the light of the interests of the company in whose service he was employed, that he declared himself unwilling to bear the responsibilities of his position, if he was not allowed to expend annually the necessary sum for the collection and collation of all statistics in detail bearing in the remotest degree upon the business of the company.

There is reason to believe that the managers of several other railroads in this country have prepared elaborate statistics of the same general character, but unfortunately those managers deem it proper to keep such information from the public, and even from their directors and stockholders.

It is exceedingly important that the public should be informed as to the great commercial movements of the country for which railways now afford very largely the facilities of transportation. This object can best be effected by the adoption of uniform returns in the several States, such returns being supplemented by correlative data in regard to the principal movements of commerce between States and between sections, collected under the authority of the National Government. This is a matter which must, however, be brought about in the light of a clear understanding of the subject in all its branches. It is a very easy matter to prepare schedules covering much desirable information touching the management of railroads and the commerce upon them; but unless great care is exercised such schedules may embrace requirements which the railroad companies will find it utterly impracticable to comply with. It is believed, however, to be quite practicable to gain information which shall serve as a guide in preventing abuses by railroad companies on the one hand, and unwise and unjust legislation on the other.

It is proposed at a future time to consider very carefully the different classes of information which should be collected in regard to interstate commerce, and the means to be adopted for securing that end.

In this connection it is sufficient to mention a few of the general topics in regard to which information is desired.

1. Statistics showing the quantity of grain, live-stock, lumber, and provisions shipped from the Western and Northwestern States into the States of the Atlantic seaboard north of the southern boundary of Virginia.

2. Statistics showing the quantity and value of the commodities just mentioned, which are shipped from the Western and Northwestern States into the South Atlantic and Gulf States.

3. Statistics showing the quantity and value of commodities shipped from the North Atlantic States into the South Atlantic and Gulf States.

4. Such statistical data as will develop (at least approximately) the value of the imports into and exports from several well-defined sections of the country. It is believed by men well informed in regard to commercial movements that it is quite practicable for railroad companies to collect and furnish much information of this character.

5. Such data as may be necessary for developing certain facts bearing upon the economy of transportation by rail under various circumstances and conditions. This is one of the most important branches of inquiry at the present time. Information of this character will aid very much in determining the distinction between just and unjust discriminations, reasonable and unreasonable charges, and other questions of public interest relative to our internal commerce.

Many of the abuses complained of in this country are directly traceable to certain features of the organization of railroad companies. Railroad management in this country has thus far been autocratic rather than representative in its form. In many cases almost absolute power is lodged in the hands of a single individual. Even at the present time many of the managers of railroads in the United States practically ignore their stockholders in the conduct of the interests intrusted to them, and the people have naturally been led to suspect that men so reckless of the interests of those whom they were bound to serve, could not be true to their obligations to the public.

In England, the policy of concealment and personal rule in railroad management has given place to that of publicity and accountability. The annual and semi-annual reports of the railroad corporations of England now present detailed and valuable information in regard to the financial affairs of the various companies, the magnitude and direction of commercial movements, and other facts of interest to proprietors and to the public. This has tended to establish confidence in railroad securities and to shield stockholders from financial exploits designed to depreciate the value of their property. The public have through such publicity been brought to a more intelligent understanding of the relations of the railroads to the state, and many erroneous ideas in the public mind as to railroad operations have been dispelled.

During the last three or four years signs of improvement in this

respect have been observed in this country, and those railroad companies which have published full statements as to their transactions have thereby gained public confidence and favor.

The directors of the Pennsylvania Railroad Company, appreciating the fact that the credit of that great enterprise (the most extensive railroad organization in the world) depended upon a thorough understanding of the policy pursued by its management, and that an attempt to pursue the policy of concealment would be liable to create suspicion and to injure its credit, the stockholders, at a meeting held March 10, 1874, appointed an investigating committee of their own number, who were directed to make an appraisement of all its roads, shops, machinery, real estate, depots, bonds, stock, &c., &c., and to inquire into the conduct of every part of its management. The report of that committee embraces much valuable information in regard to the operations of railroad companies in their relations to stockholders and to the public.

The following extract in relation to the sources of the existing distrust in the value of railway stock and securities is of interest:

> The meager and incomplete reports of the directors of railroads made to the stockholders. Railway directors in their reports seem guided by the old adage "that the least said is soonest mended." There is a tendency to limit their reports to the general results of a year's work, giving financial results and the economic workings, while the stockholders are left in great ignorance of the value of their own property. There should be in every report the fullest detail of these items, enabling each stockholder, at the end of a year, to make his own estimate of the value of his stock. But these reports should go further, and give the most ample information as to the position of the road in its relations with other roads, and state fully all the facts that might influence its policy, its plans for the future, or its finances.

The railroad commissioners of the State of Wisconsin, having made a thorough investigation of all the causes of distrust and of hostility which led to the popular opposition to railroad management throughout the West, have very fully and with great ability discussed the evils of the policy of concealment. Their conclusions upon this subject are expressed as follows:

> Regarding the possibility of secrecy as affording encouragement to fraud and mismanagement on the one hand and on the other as being a frequent occasion for unwarrantable suspicion on the part of the public, we are strong in the conviction that it is of great importance to both railway companies and people that the reports made by such companies should be very much more full and thorough than they have been heretofore. There may be cases in which an honest corporation, struggling through financial straits, would prefer that its exact condition should not be known to the world; and yet, even in such cases, the policy of concealment is one of very doubtful propriety or advantage, while the amount of injury that may be done to the public and to the credit of the State by encouraging less honorable corporations in the practice of secret frauds may be very great. The fact must not be lost sight of that the State, to the extent of its power to prevent the practice of wrongs upon the public by the corporations of its own creation, is bound to regard the general welfare, future as well as present, rather than the tottering credit of one or more unfortunate corporations.

The railroad commissioners of Massachusetts have, in their annual report for the year 1875, emphasized the importance of the policy of

publicity, and pointed to the natural effect of this policy as a means of preventing abuses. After exposing the unreliable character of the railroad-returns made to the State the commissioners say:

There is but one remedy for such a condition of affairs; that, however, is a very obvious one. It will be found in an increased publicity and more perfect uniformity. The last vestige of the old idea that the accounts of railroad corporations are matters of private concernment only, and as such can best be managed in secret, must be gotten rid of. To bring about this result, a bill was prepared a year ago and submitted by this board to the joint legislative committee on railways. It was meant to be radical in its character, having been prepared in the full light of the many and notorious railroad scandals of the last ten years, and with the financial revelations which followed the crisis of 1873 still fresh in mind. It subjected the books of the railroad corporations to a constant and regular public supervision, with a view to securing accuracy and uniformity in the method of keeping them. The results set forth in future returns were to be not only plausible but they were actually to represent the exact condition of the affairs of each company, not only in themselves but as compared with those of every other company. Where charges had to be apportioned under arbitrary rules, those rules were in all cases to be approximately the same. Where, under exceptional circumstances, deviations from those rules became necessary, attention was to be called to them as such.

This bill subsequently became a law.

If similar measures shall be adopted in other States, the great railroad corporations of the country will come to realize the fact that their true interests lie in the direction of the fullest and most complete publicity, and the commercial interests of the country will thereby be advanced.

INFORMATION FURNISHED BY EXPERTS.

In compliance with the terms of the law requiring the preparation of this report, the services of several gentlemen, well informed in regard to the commercial and transportation interests of the country, have been secured, for the purpose of furnishing statistical and other necessary information.

A large part of the contributions of these gentlemen may be found in the appendix to this report. Attention is especially called to the interesting and valuable statements prepared by the following persons:

Mr. Albert Fink, of Louisville, Ky., a well-known civil engineer and railroad manager; Mr. J. D. Hayes, of Detroit, Mich., a gentleman who has been largely engaged in the management of railroads, and of traffic upon them; Mr. Theodore F. Lees, general agent of the New York Cheap Transportation Association, a gentleman who has devoted much attention to the study of the railroad question; Mr. Charles Randolph, secretary of the Board of Trade of Chicago, and secretary of the National Board of Trade of the United States; Col. Milo Smith, of Clinton, Iowa, a gentleman who has been extensively engaged in the construction and management of railroads in the Western States; Mr. Hamilton A. Hill, formerly secretary of theBoard of Trade of Boston, and of the National Board of Trade; Mr. George U. Porter, secretary of the Baltimore Board of Trade; Mr. Sidney D. Maxwell,

superintendent of the Cincinnati Chamber of Commerce; Mr. William Melhinch, of Cleveland, Ohio, a gentleman well informed as to the commerce of that city; Mr. C. F. Wales, secretary of the Toledo Board of Trade; Mr. Curtis Guild, of Boston, a gentleman well in formed as to the commercial interests of Boston and of the State of Massachusetts; Mr. William Thurston, secretary of the Board of Trade of Buffalo, N. Y.; Mr. George H. Morgan, secretary of the Merchants' Exchange of Saint Louis, Mo.; Mr. Henry G. Hester, secretary of the New Orleans Cotton Exchange, and formerly secretary of the National Cotton Exchange; Mr. C. F. Solberg, formerly commissioner of statistics of the State of Minnesota; and Mr. C. H. Pope, of Louisville, Ky., a gentleman well informed as to the commerce of that city. Each one of these sixteen gentlemen has had a large business experience, and the names of all are well known, a fact which lends great value to their respective statements.

It is proposed in the preparation of the next report to secure the services, as experts, of several persons well-informed in regard to the agricultural and manufacturing interests of the country in their relations to commerce. This is a measure which naturally follows the line of effort pursued during the past year.

The main object to be attained is that of presenting such information as will convey to Congress, in a concise and perspicuous manner, the more important facts in regard to the movements of commerce and the conditions governing those movements. The importance of the collection and publication of such information has been several times asserted by the National Board of Trade and by several of the principal commercial bodies of the country.

The adoption of measures for the purpose of meeting this requirement will tend to bring the National Government into closer sympathy with the commercial interests of the country.

CONCLUSION.

Until recently circumstances have been quite unfavorable to the attainment of a knowledge of the movements of commerce on railroads. A long period elapsed before the modes and habits of commerce could be adapted to the new method of transportation and before railroad managers were able to supply the requisite facilities, and to shape the administration of the affairs of the roads so as to meet the varied requirements of trade. As the rival trunk roads were extended from the Atlantic seaboard toward the West their interests soon began to clash. A period of wild railroad expansion followed, during which fierce antagonisms prevailed and all the economies of railroad management were subordinated to the policy of gaining "strategic advantages."

The period of the extension and consolidation of lines was characterized by bold exploits, reckless management, and glaring abuses; almost absolute power being concentrated in the hands of so-called "railroad

kings," men of strong wills and ambitious purposes. But at last the conflict of rival railroad interests and the overruling influence of commercial forces rendered it impracticable to parcel out the commerce of this country among four or five great railroad corporations. The realization of this fact marked the beginning of a conservative period. Railroad managers then began to attend more closely to the conditions surrounding them, and to seek new expedients for protecting the vast interests which had fallen into their hands. From the force of necessity, they were compelled to study the course of trade and the conditions and circumstances governing its movements. The knowledge thus gained has been derived from stern experience.

The depressed condition of the business of the country during the last four years has, more than anything else, forced railroad managers to such economies as have made the roads in a higher degree than ever before *avenues of commerce.* The opening up of new lines of commerce, the establishment of direct traffic between distant points, the diversion of important branches of commerce from certain trade-centers, and the concentration of other branches of trade and industry at other points have also led to great changes in the commercial habits of the country. The increasing competition of product with product in the various markets, or, in other words, "the struggle of all commodities to reach a parity in value," is a direct result of the influence of railroad transportation toward the equalization of values, a circumstance which has been slowly but surely working a revolution in commercial affairs.

The greatly changed condition of the transportation interests of the country has led to a marked change of sentiment regarding the relations of the railroads to the public. During those years of expansion and of contest for a prize which became more and more intangible with the extension of the lines which were to grasp it, the policy of *concealment* was rigidly adhered to; but, since more practical and business-like methods have been adopted, the wisdom of the policy of publicity is becoming apparent. When great expectations were succeeded by disappointment, stockholders began to demand information in regard to the management of their properties. At the same time trade-organizations began very carefully to take note of the movements of commerce by rail, and the legislatures of the different States inaugurated measures for the collection of statistical and other facts in regard to railroad operations, the tendency being constantly toward accuracy and perspicuity in the returns.

The moral effect of a better understanding of the whole question has tended to wear off asperities, and a spirit of accommodation in the minds of railroad managers has taken the place of a tendency toward an isolation of their interests. The present is therefore believed to be a most auspicious time for the inauguration of concerted measures for the development of a knowledge of the internal commerce of the country. Railroad managers, State railroad commissions, voluntary associations,

and individuals in an official or private capacity are all lending their efforts in this direction, and the importance of a knowledge of facts tending to throw light upon the subject is generally appreciated.

In adjusting itself to the conditions of the varied interests of society, the railroad system has been and is still passing through the processes of an evolution, but it is an evolution the course of which has always been and always will be hidden. Special efforts at adjustment have failed, and disappointment has overwhelmed many a supposed *solution of the whole question.* But the general tendency has always been in the direction of progress. The railroad has not only moved toward the commercial, the industrial, and the social habits of the people, but the interests of the people have shaped themselves to the exigencies of railroad transportation.

In the efforts which are now being put forth to settle the various questions touching the relations of the railroads to commerce, to the state, and to each other, men may plan and they may execute; but unless they build wiser than they know, they will build in vain. Concession and comity must grow into custom, and custom must develop into law. This is the natural course of adjustment; this the way in which every forceful agency becomes a factor in human activities.

The most effective instrumentality in bringing about this desired end will be found to be the diffusion of a knowledge of all the conditions governing the internal commerce of the country.

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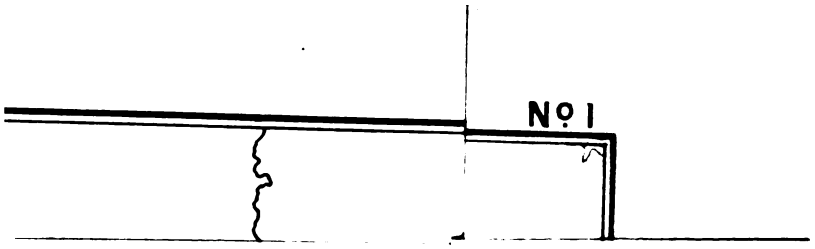
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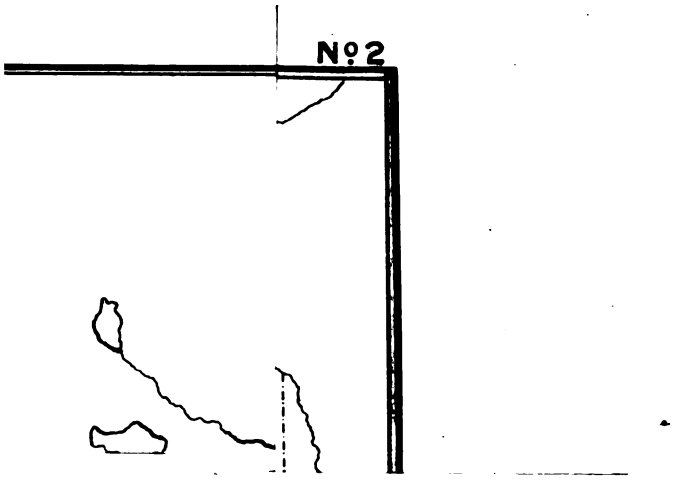
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No.3

GRAND TRUNK RAILROAD

WITH

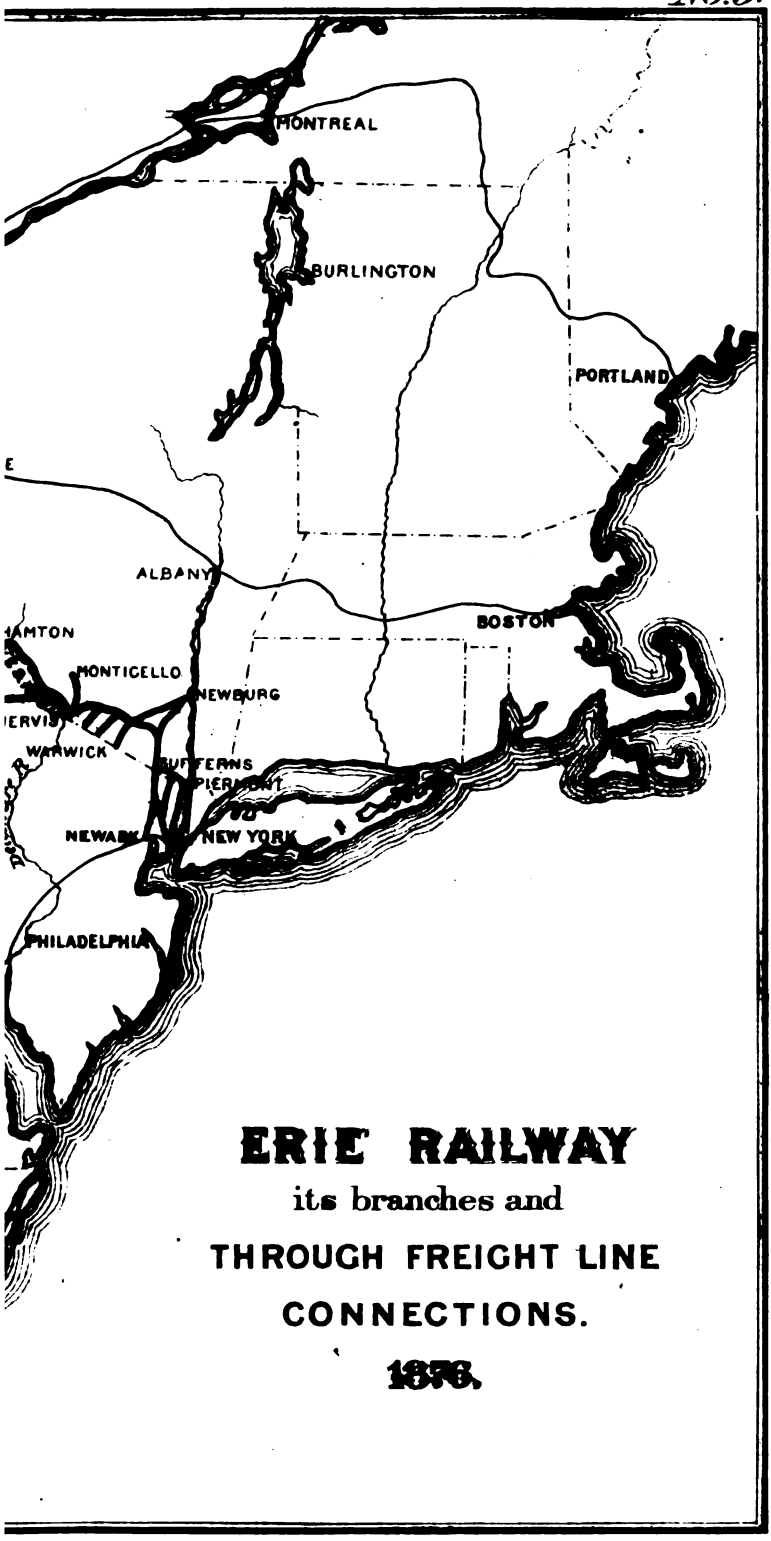
CENTRAL VERMONT

AND

WESTERN CONNECTIONS.

1876.

No. 5.



ERIE RAILWAY

its branches and

THROUGH FREIGHT LINE

CONNECTIONS.

1876.

No. 7

BALTIMORE AND OHIO RAILROAD

ITS BRANCHES & THROUGH FREIGHT LINE CONNECTIONS.

1876.

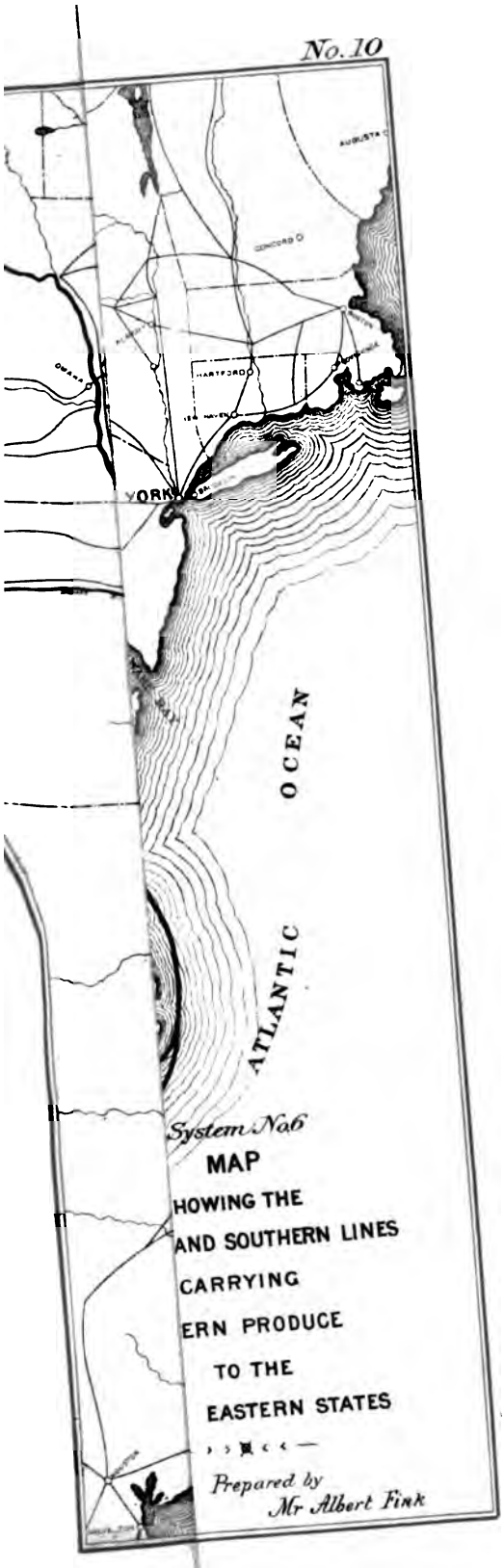
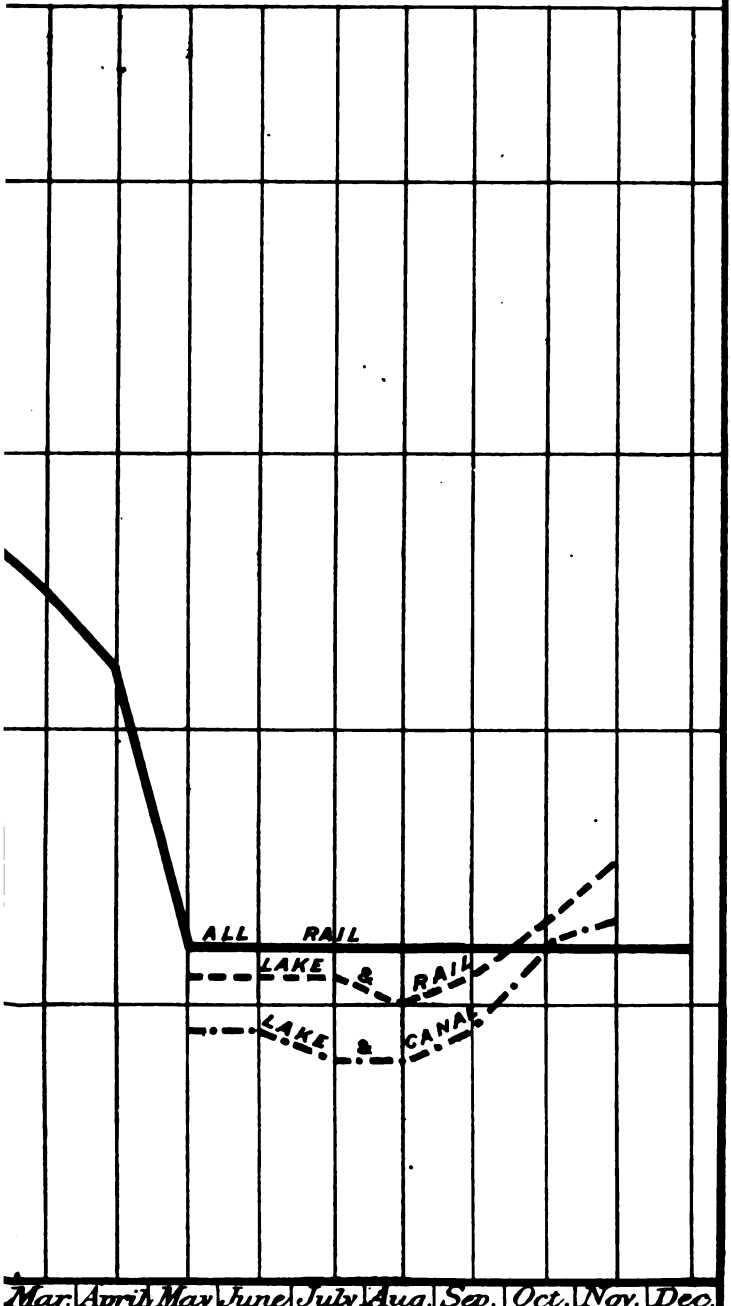

No. 10
OCEAN
ATLANTIC
System No6
MAP
HOWING THE
AND SOUTHERN LINES
CARRYING
ERN PRODUCE
TO THE
EASTERN STATES
Prepared by
Mr Albert Fink

Chart No. 1

HUDSON RIVER.

1876.



Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
24	22	12	12	12	12	12	12	12	12
		11	11	11	10	11	13	15	
		9	9	8	8	9	12	13	

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Chart No. 2

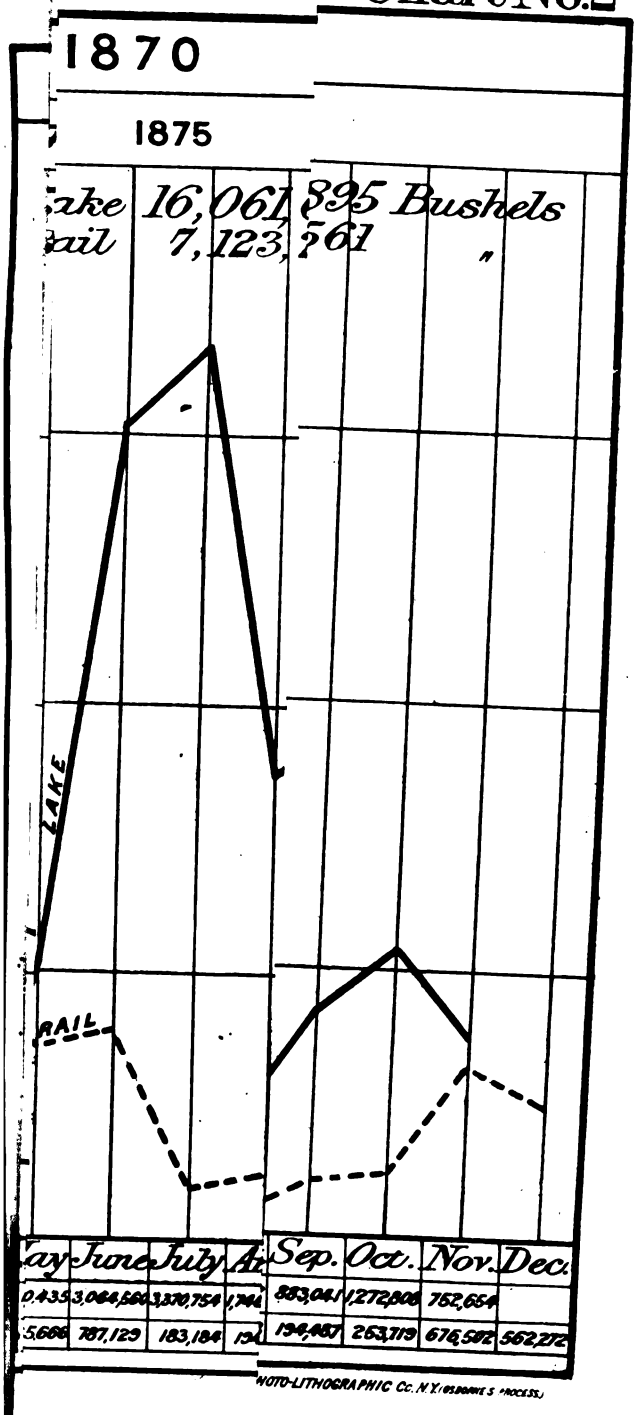
1870
1875
Lake 16,061,895 Bushels
Rail 7,123,761 "
LAKE
RAIL
May June July Aug. Sep. Oct. Nov. Dec.
0,433,3,064,560,3,370,754 1,744 883,041 1,272,908 752,654
5666 787,129 183,184 194,487 253,719 676,582 562,272
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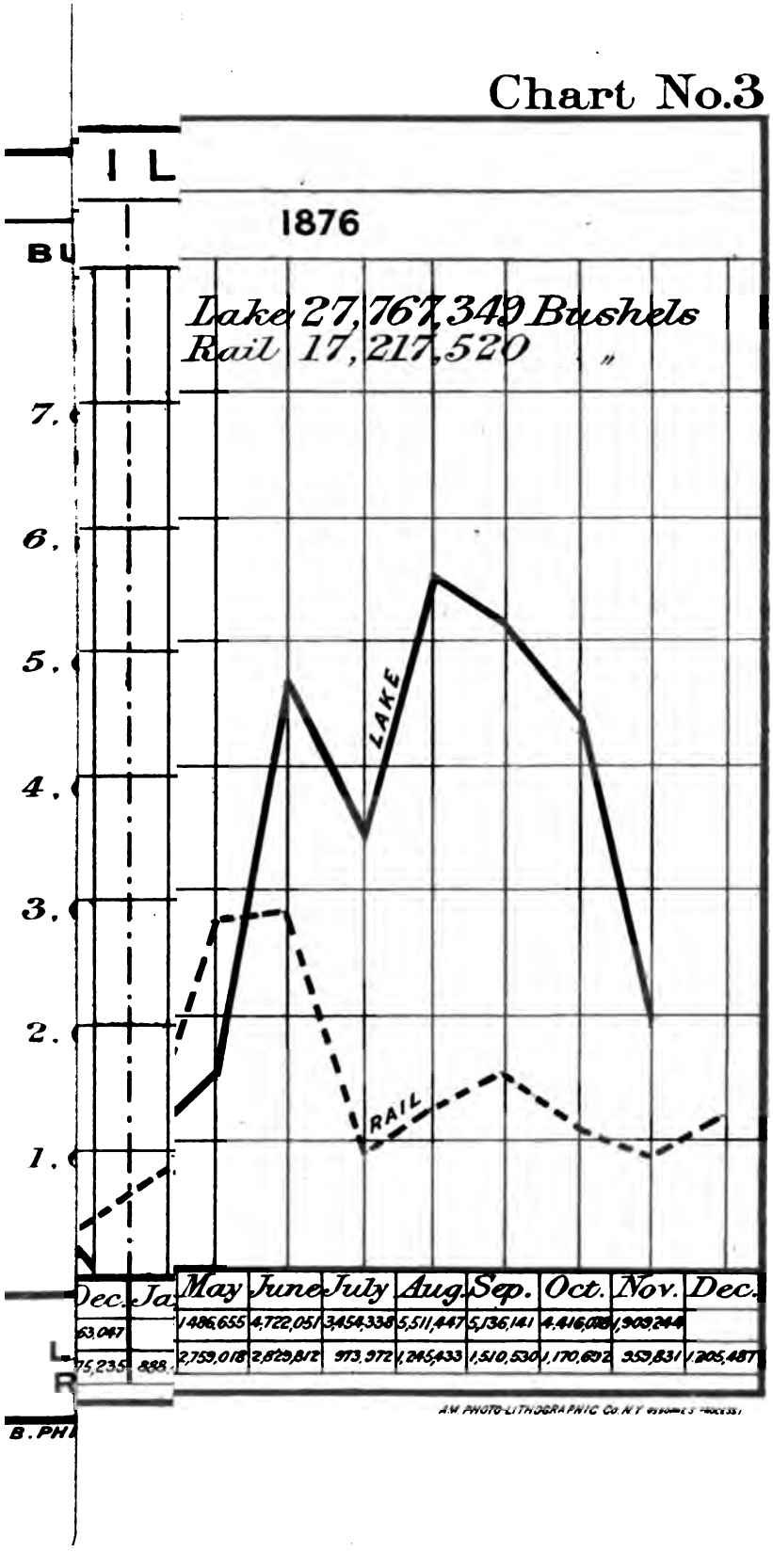
Chart No.3


1876
Lake 27,767,349 Bushels
Rail 17,217,520 "
7.
6.
5.
4.
3.
2.
1.
LAKE
RAIL
May June July Aug. Sep. Oct. Nov. Dec.
1,486,655 4,722,051 3,454,338 5,511,447 5,136,141 4,416,088 1,909,244
2,759,018 2,829,872 973,972 1,245,433 1,510,530 1,170,692 353,831 1,205,487
A.W. PHOTO-LITHOGRAPHIC Co. N.Y.

APPENDIX

TO

REPORT ON INTERNAL COMMERCE.

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ERRATA.

APPENDIX No. 1.

Page 7, line 8, *for* "4-5" *read* "10-11."

Page 8, line 1, *after* "direction" *read* "East of the Mississippi River."

Page 8, line 52, *for* "$16,000,000" *read* "$2,000,000;" and *for* "$1,280,000" *read* "$1,600,000."

Page 10, line 10, *omit* "not."

Page 12, line 33, *read* "low" *for* "lowest."

Page 24, line 48, *for* "protected" *read* "perfected."

Page 27, line 3, answer 12, *after* "shipped" *read* "by routes," and *for* "15" *read* "1.5."

Page 29, line 4, *after* "and" *read* "to avoid."

Page 32, last line of answer 21, *for* "236" *read* "23.6," and *for* "118" *read* "11.8."

Page 34, line 2, *after* "the" *read* "northern."

Page 36, line 30, *omit* "not to make unjust discriminations."

Page 39, line 31, *omit* "distance and" and *read* "a."

Page 40, line 2, question 33, *for* "a" *read* "the."

Page 40, lines 10-12, answer 33, *for* "Werbünde" *read* "Verbünde," and in last line *for* "a great" *read* "to be an."

Page 40, line 23, *after* "ship" *read* "ten."

Page 41, line 6, *for* "sure" *read* "safe," and in line 10, *for* "smaller" *read* "larger."

Page 41, line 33, *for* "6" *read* "24."

Page 41, line 45, *for* "$2,486,500" *read* "$2,956,500."

Page 41, line 51, *for* "only" *read* "not."

Page 41, line 58, *omit* "and greater loads it."

Page 41, line 58, *for* "capacity" *read* "loads."

Page 42, line 19, *after* "in" *read* "the want of."

Page 42, line 66, *for* "1868" *read* "1872."

Page 43, line 2, question 37, *for* "classes" *read* "charges."

Page 43, line 4, answer 37, *for* "proportionate" *read* "proportion to."

Page 43, line 9, *after* "cent" *read* "for any additional tonnage that might be thrown upon them."

Page 44, line 1, answer 38, *for* "5 and 7" *read* "27-36."
Page 44, line 34, *for* "4" *read* "27."
Page 45, line 6, *omit* "where it is open to competition to many other lines."
Page 45, line 2 from bottom of page, *for* "their" *read* "these."
Page 46, line 5, *before* "Railroad" *read* "in," and *omit* "take effect."
Page 46, line 6, *for* "As" *read* "as."
Page 46, line 19, *for* "they" *read* "the rates."
Page 46, line 40, *after* "roads," and *before* "that," *read* "and."
Page 47, line 6, *for* "their" *read* "this."
Page 47, line 23, *for* "understood" *read* "understands."
Page 47, line 25, *for* "wonders" *read* "much."
Page 47, line 1, answer 41, *after* "cost" *read* "of operation."
Page 48, line 1, answer 45, *for* "7,400" *read* "74,000."
Page 48, line 5, answer 45, *for* "87" *read* "8.7."

APPENDIX No. 2.

Page 65, line 4, answer 34, *for* "Companies" *read* "Commissioners."

APPENDIX No. 3.

Page 76, line 5, answer 25, *for* "15,000,000" *read* "1,500,000."

APPENDIX No. 8.

Page 114, *instead of* "Sydney D. Maxwell, *Secretary*," *read* "Sidney D. Maxwe Superintendent."
Page 124, 7th line from bottom, instead of *natural* read *national.*
Page 126, 7th line from bottom, insert *center* after the word *railway.*

APPENDIX NO. 1.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCIAL MOVEMENTS BETWEEN THE WESTERN AND THE SOUTH ATLANTIC AND GULF STATES, THE ECONOMY OF TRANSPORT ON RAIL AND WATER LINES, AND THE COMPETITION BETWEEN MARKETS AND BETWEEN TRANSPORTATION LINES, BY MR. ALBERT FINK, OF LOUISVILLE, KY., 1876.

Question 1. An effort is being made to ascertain the quantity of flour, grain, live animals, and provisions shipped from States north of the State of Arkansas and north of the Ohio River into States south of those limits during the year 1875. Will you please state the lines of transportation east of the Mississippi River by which such products are carried into the Southern States?

Answer. The following are the principal lines between the West and the South engaged in transportation of western produce:

1. Louisville and Nashville Railroad, from Louisville to Nashville, 185 miles long. At Louisville this road connects with roads from Cincinnati, Chicago, Saint Louis, and all points West and North. At Nashville, connects with Nashville and Chattanooga Railroad, 151 miles long; then with Western and Atlantic Railroad, 138 miles, from Chattanooga to Atlanta. Total distance, Louisville to Atlanta, 474 miles. Atlanta is the chief distributing point for western produce to the State of Georgia, and through it passes the western produce to the Atlantic seaboard.

2. Louisville and Nashville Railroad to Nashville, as above, 185 miles; Nashville and Decatur Railroad, Nashville to Decatur, 122 miles; Decatur to Montgomery and to Selma, via South and North Alabama Railroad, 183 miles; total length from Louisville to Montgomery and Selma, 490 miles. Montgomery and Selma, Ala., are the distributing points for western produce for Alabama, Southern Georgia, and Western Florida.

3. Saint Louis and Southeastern Railroad, from Saint Louis to Nashville, 316 miles. At Evansville this road connects with roads from Chicago, the West and Northwest, also with Ohio River steamers. At Nashville it connects with Nashville and Chattanooga Railroad and the Nashville and Decatur Railroad, (Louisville and Nashville Railroad Company lessees,) same as routes Nos. 1 and 2.

4. The Nashville and Northwestern Railroad, (now consolidated with Nashville and Chattanooga Railroad.) This road connects at Cairo, via New Orleans, Saint Louis and Chicago Railroad, and Columbus, via Mobile and Ohio Railroad, with roads from Chicago and Saint Louis, (the Illinois Central, Saint Louis and Iron Mountain, and Saint Louis and Cairo Short Line,) as well as with steamboats and barges on Mississippi and Ohio Rivers. At Nashville it makes same connections as routes Nos. 1 and 2.

5. Steamers on Cumberland River, connecting at Nashville with Nashville and Chattanooga and Nashville and Decatur Railroads, same as routes Nos. 1 and 2.

6. Steamers on Tennessee River connect at Johnsonville with Nashville and Northwestern Railroad, via Nashville, same as routes Nos. 1 and 2.

7. Memphis and Charleston Railroad connects at Memphis with steamers and barges on Mississippi River from Saint Louis and all points on river; runs from Memphis to Chattanooga, 310 miles, and thence, as via route No. 1, to Atlanta.

8. Memphis and Charleston Railroad, from Memphis to Decatur, 188 miles, and from Decatur, via South and North Alabama Railroad, to Montgomery and Selma, 183 miles. Total, Memphis to Montgomery or Selma, 371 miles.

9. Cairo to Grand Junction, via New Orleans, Saint Louis and Chicago Railroad, 154 miles; thence, via Memphis and Charleston Railroad, 136 miles, to Decatur, and via South and North Alabama Railroad, 183 miles, to Montgomery or Selma; also from Grand Junction, via Memphis and Charleston Railroad, to Chattanooga, 258 miles, and thence to Atlanta.

10. Columbus, Ky., via Mobile and Ohio Railroad, to Corinth, 143 miles, and thence, via Memphis and Charleston Railroad, to Chattanooga, 226 miles, and thence to Atlanta, and also from Corinth, via Decatur, (Memphis and Charleston Railroad,) 95 miles, and thence, via South and North Alabama Railroad, to Montgomery and Selma.

11. Steamers and barges on Mississippi River to Vicksburgh, and thence by rail, Vicksburgh to Meridian, (Vicksburgh and Meridian Railroad,) 140 miles; Meridian to Selma, (Alabama Central Railroad,) 108 miles; Selma to Montgomery, (Western Rail-

road of Alabama,) 50 miles; Montgomery to Atlanta, (Western Railroad of Alabama and Atlanta and West Point Railroad,) 175 miles. Total miles from Vicksburgh to Atlanta, 473. Also, Montgomery to Eufaula, (Montgomery and Eufaula Railroad,) 81 miles. Also, Montgomery to Columbus, Ga., (Western Railroad of Alabama,) 95 miles.

12. New Orleans, Saint Louis and Chicago Railroad, (with all connections north as per route No. 4,) Cairo to Jackson, Miss., 366 miles, and thence to Meridian 95 miles, and all points named in route No. 11.

13. Mobile and Ohio Railroad from Columbus, Ky., to Meridian, 337 miles, and thence, via Alabama Central Railroad to all points named in route No. 11. The three routes Nos. 11, 12, and 13 have in common the Alabama Central Railroad, Meridian to Selma, and thence reach points named in route No. 11.

14. Steamers and barges on Mississippi and Ohio Rivers to New Orleans, and thence, via New Orleans and Mobile Railroad, to Mobile, 141 miles. Mobile and Montgomery Railroad, Mobile to Montgomery, 180 miles, and thence, as per route No. 11, to Atlanta, Columbus, and Eufaula.

15. From New Orleans, by steamers, to Mobile; thence, via steamers on Alabama River, to Selma and Montgomery.

These are the principal western routes carrying western produce to the South Atlantic and Gulf States. These routes all center in Atlanta and Montgomery; from thence they branch out to all interior points and to the Atlantic coast and the Gulf.

The following transportation-lines carry produce to the States bordering on the Mississippi River:

16. Mobile and Ohio Railroad, from Columbus, Ky., to Mobile, length 472 miles, carries western produce (besides to the points already named) to all stations on its own line in Kentucky, Tennessee, Mississippi, and Alabama; to Memphis, via Louisville and Memphis Railroad, from Humboldt; and to Vicksburgh, via Vicksburgh and Meridian Railroad, from Meridian, and to Mobile.

17. The New Orleans, Saint Louis and Chicago Railroad, Cairo to New Orleans, length 548 miles, carries western produce to all stations on its own road, including New Orleans, and to the roads intersecting it already named; also to Memphis, via Milan, (Louisville and Memphis Railroad;) to Vicksburgh, via Jackson, Miss., (Vicksburgh and Meridian Railroad.)

18. The Louisville and Memphis Railroad, (branch of L. and N. R. R.,) from Louisville to Memphis, 377 miles; and from Louisville to Montgomery, thence, via Mobile and Montgomery Railroad, to Mobile; and, via New Orleans and Mobile Railroad, to New Orleans.

19. The Louisville and Memphis Railroad, to Milan, 282 miles, where it connects with the New Orleans, Saint Louis and Chicago Railroad to all points named in route No. 17.

20. The Louisville and Memphis Railroad, to Humboldt, 296 miles, where it connects with Mobile and Ohio Railroad, as per route No. 16.

21. The Louisville, Paducah and Southwestern Railroad, from Louisville to Paducah, and thence connecting, via Paducah and Memphis Railroad, with Mobile and Ohio Railroad, and New Orleans, Saint Louis and Chicago Railroad, as per routes 16 and 17.

22. Steamers on Mississippi and Ohio Rivers to all landings on those rivers.

By these twenty-two western lines produce is carried into the States south of the Ohio River and east of Mississippi River to the Gulf and Atlantic seaboard. The northern limit in the east reached by these western lines is Wilmington and Charlotte, N. C.

Western produce is carried into the Gulf States by the following eastern lines:

23. Chesapeake and Ohio Railroad:

	Miles.
Cincinnati to Huntington, by Ohio River	160
Huntington to Richmond, (rail)	421
Richmond to Charlotte, via Richmond and Danville Railroad	282
Charlotte to Atlanta, via Atlanta and Richmond Air-Line Railway	266
Cincinnati to Atlanta	1,129
Charlotte to Augusta, via Charlotte, Columbia and Augusta Railroad	195
Augusta to Macon, via Macon and Augusta Railroad	125
Augusta to Charleston, via South Carolina Railroad	138
Augusta to Savannah, via Central Railroad of Georgia, or Port Royal Railroad	132

Also, same as foregoing, via Chesapeake and Ohio Railroad, to Charlottesville, Va.; thence, via Washington City, Virginia Midland and Great Southern Railroad, to Danville, Va, where connection is made with Richmond and Danville Railroad—total distance, Cincinnati to Atlanta, 1,017 miles.

The following lines carry some western produce, but are principally engaged in the traffic between Boston, New York, Philadelphia, and Baltimore, and the Southern States.

Most of the western produce is carried by the Baltimore lines. These lines have connection by sea with Boston, New York, Philadelphia, and Baltimore, but in enumerating them I will use New York only as terminal point.

24. Piedmont Air-Line:

	Miles.
Steamer New York to Richmond, (prorating distance)	192
Thence, via Richmond and Danville Railroad, to Charlotte	282
Charlotte to Atlanta, via Atlanta and Richmond Air-Line Railroad	266
Total, New York to Atlanta	740
Atlanta to Montgomery, via Atlanta and West Point and Western Alabama Railroad	175
Montgomery to Selma, via Western Railroad of Alabama	50
Atlanta to Rome, via Western and Atlantic and Rome Railroad	100

Charlotte south to Augusta, as per route No. 23.

25. Great Southern Despatch:

	Miles.
New York to Norfolk, via Old Dominion steamers, prorating distance	160
Norfolk to Burksville, via Atlantic, Mississippi and Ohio Railroad	133
Burksville to Charlotte, via Richmond and Danville Railroad	229
Charlotte to Atlanta, via Atlanta and Richmond Air-Line Railroad, as per route 23.	266
Total, New York to Atlanta	788

From Atlanta to Montgomery and Selma and Rome as per route 24; also from Charlotte to Augusta as per route 23.

26. Virginia and Tennessee Air-Line:

	Miles.
New York to Norfolk, via Old Dominion steamers, prorating distance	160
Norfolk to Bristol, via Atlantic, Mississippi and Ohio Railroad	408
Bristol to Dalton or Chattanooga, via East Tennessee, Virginia and Georgia Railroad	240
Dalton to Atlanta, via Western and Atlantic Railroad	100
Total, New York to Atlanta	908
Dalton to Rome, via Selma, Rome and Dalton Railroad	40
Dalton to Selma, via Selma, Rome and Dalton Railroad	236
Dalton to Calera, via Selma, Rome and Dalton Railroad	174
Calera to Montgomery, via South and North Alabama Railroad	62
Chattanooga to Nashville, via Nashville and Chattanooga Railroad	151
Chattanooga to Memphis, via Memphis and Chattanooga Railroad	309
Chattanooga to Meridian, Miss., via Alabama and Chattanooga Railroad	295

27. Atlantic Coast Line:

New York to Portsmouth, Va., via Old Dominion steamers, prorating distance	160
Portsmouth to Weldon, via Seaboard and Roanoke Railroad	80
Weldon to Wilmington, via Wilmington and Weldon Railroad	162
Wilmington to Columbia, via Wilmington, Columbia and Augusta Railroad	189
Columbia to Augusta, via Charlotte, Columbia and Augusta Railroad	85
Augusta to Atlanta, via Georgia Railroad	171
Total, New York to Atlanta	847

Atlanta to Montgomery, Selma, and Rome as per route 24.

Wilmington to Florence, via Wilmington, Columbia and Augusta Railroad	108
Florence to Charleston, via Northeastern Railroad	102
Charleston and Savannah, via Savannah and Charleston Railroad	107
Augusta to Macon, via Macon and Augusta Railroad	125

28. New York to Wilmington by steamer, prorating distance, 200 miles; thence as per route 27 to all points.

	Miles.
Distance, New York to Atlanta	887
29. New York to Wilmington by steamer, prorating distance	200
Wilmington to Charlotte, via Carolina Central Railway	187
Charlotte to Atlanta, via Atlanta and Richmond Air-Line Railway, as per route 24.	266
Total New York to Atlanta	553

From Atlanta to Selma, Montgomery, and Rome, as per route 24.

30. Charleston Line:

	Miles.
New York to Charleston by steamer, prorating distance	200
Charleston to Augusta, via South Carolina Railroad	138
Augusta to Atlanta, via Georgia Railroad	178
Total New York to Atlanta	516

Atlanta to Montgomery, Selma, and Rome, as per route 24.

Augusta to Macon, via Macon and Augusta Railroad, as per route 27	125

31. Port Royal Line:

New York to Port Royal by steamer, prorating distance	200
Port Royal to Augusta, via Port Royal Railroad	112
Augusta to Atlanta, via Georgia Railroad, as per route 27	171
Total, New York to Atlanta	483
Augusta to Macon, via Macon and Augusta Railroad, as per route 27	125

Atlanta to Selma, Montgomery, and Rome, as per route 24.

32. Savannah Line:

New York to Savannah, by steamer, prorating distance	201
Savannah to Macon, by Central Railroad of Georgia	192
Macon to Atlanta	103
Total, New York to Atlanta	496
Savannah to Augusta, by Central Railroad	125
Atlanta to Rome, as per route 24	100
Macon to Albany, by Southwestern Railroad	107
Macon to Eufaula, by Southwestern Railroad	143
Macon to Columbus, by Southwestern Railroad	100
Columbus to Montgomery, by Western Railroad of Alabama	94
Montgomery to Selma, by Western Railroad of Alabama, as per route 24	50

33. New York to Savannah, by steamer, prorating distance 201
Savannah to Live Oak, Fla., by Atlantic and Gulf Railroad 179
Live Oak to Jacksonville, by Jackson, Pensacola and Mobile Railroad 79
Savannah to Bainbridge, by Atlantic and Gulf Railroad 236
Savannah to Albany, by Atlantic and Gulf Railroad 258
Savannah to Jessup, by Atlantic and Gulf Railroad 57
Jessup to Macon, by Macon and Brunswick Railroad 146
Macon to Atlanta, by Central Railroad, as per route 32 103

Total, New York to Atlanta 507

34. Brunswick Line:

New York to Brunswick, by steamer, prorating distance	250
Brunswick to Macon, via Macon and Brunswick Railroad	186
Macon to Atlanta, via Central Railroad, as per route 32	103
Total, New York to Atlanta	539
Brunswick to Jessup, via Macon and Brunswick Railroad	40
Jessup to Albany, via Atlantic and Gulf Railroad	201

35. New York to Brunswick, by steamer, prorating distance 250
Brunswick to Albany, by Albany and Brunswick Railroad 171

36. New York to Fernandina, by steamer:

Fernandina to Baldwin, by Florida Railroad	47
Baldwin to Jacksonville, by Jackson, Pensacola and Mobile Railroad, as per route 33	19
Baldwin to Tallahassee, by Jackson, Pensacola and Mobile Railroad, as per route 33	146
Baldwin to Chattahoochie, by Jackson, Pensacola and Mobile Railroad, as per route 33	190

thence by steamboat to all landings on Chattahoochie and Flint Rivers, and to Bainbridge, Eufaula, Albany, and Columbus.

37. Steamers, New York to New Orleans, and thence by New Orleans and Mobile Railroad, and Mobile and Montgomery Railroad, and by steamboat to Montgomery and Selma.

Routes Nos. 24 to 32 inclusive, work from Montgomery, via Mobile and Montgomery Railroad to Mobile, and thence via New Orleans and Mobile Railroad to New Orleans. Also from Selma, via Alabama Central Railroad, 107 miles, to Meridian, Miss., and thence 140 miles, via Vicksburgh and Meridian Railroad, to Vicksburgh, Miss.

The 37 transportation-routes carrying western produce to the South may be for a more convenient oversight classified as follows:

System 1. Routes No. 1 to 6 centering in Nashville, and from there branching out in a southeastern direction to Atlanta, via Nashville and Chattanooga and Western and Atlantic Railroad, and in a southern direction to Montgomery, via the Louisville and Nashville Railroad (Nashville and Decatur Railroad) and South and North Alabama Railroad.

System 2. Routes No. 7 to 10, passing through Chattanooga to Atlanta, and through Decatur to Montgomery.

System 3. Routes No. 11 to 13, reaching Montgomery and Atlanta, via Alabama Central Railroad, (Meridian to Selma.)

System 4. Route No. 14, reaching Montgomery and Atlanta, via Mobile and Montgomery Railroad, Western Railroad of Alabama, and Atlanta and West Point Railroad.

System 5. Routes No. 15 to 22, reaching the States bordering on the Mississippi River, including the State of Alabama.

System 6. Routes No. 23 to 37, reaching the Southern States from the West, via the Chesapeake and Ohio Railroad, and via the eastern and southern trunk lines.

Question 2. Please to describe in general terms the nature of the competition existing between rival railroads extending from the Western States into the Southern States, and mention generally the principal points at which and the geographical limits within which such competition exists.

Answer. I have in answer to question 1 enumerated the various transportation lines competing for the western traffic to the South Atlantic States and Gulf States east of the Mississippi River.

The first six lines named, comprising the first system, which center in Nashville and connect for the Southeast, Chattanooga and Atlanta with the Nashville and Chattanooga Railroad, and for the South to Montgomery and Selma with the Nashville and Decatur division of the Louisville and Nashville Railroad.

These six lines compete, therefore, for business with each other as far as Nashville, and there become common feeders to the southern lines named, the Nashville and Chattanooga and Nashville and Decatur Railroads. These two lines reach the same points in the South, but do not compete with each other.

By mutual agreement they work to specified territories, determined by the shortest distance at which it may be reached by each line.

The second system of lines, (from 7 to 10,) competing with the first, consists of the Memphis and Charleston Railroad and its feeders.

For the Southeast, (Atlanta,) the first and second systems compete with each other as far as Chattanooga, where they connect with the Western and Atlantic Railroad, to which they become common feeders.

At Decatur the second system of lines compete with all the lines named in the first system, working via Nashville and the Nashville and Decatur division of the Louisville and Nashville Railroad, and connect with the South and North Alabama Railroad, (controlled by the Louisville and Nashville Railroad,) to which road they all become common feeders.

The third system of lines (from 11 to 13) consists of the roads from Vicksburgh to Meridian and Selma, with their connections by river and rail, and compete at Selma and Montgomery and all points east with the first and second systems of lines, (from 1 to 10.)

The fourth system, (14 and 15,) comprising the lines working via New Orleans to Mobile and Montgomery and points east, compete again with the three first systems of lines, 1 to 13.

We have therefore three distinct systems of competitive transportation lines, each consisting of a number of roads, all competing for the same business with each other.

All the lines constituting the fifth system (16 to 22) are in competition with each other for the traffic from the West and North to the States bordering on the Mississippi River, but this competition is not shared by the three first systems, which work into a territory farther to the east.

The sixth system of roads, (the eastern lines from 23 to 37,) while they are all competing with each other, are competing also with the three first systems of roads for western traffic, more particularly, however, to the States on the Atlantic coast.

The eastern and southern lines named do not only compete with the western lines for the same articles of traffic, such as are only produced in the West, but there is

strong competition between them regarding the articles of traffic which are produced both in the East and in the West, such as agricultural implements, machinery, manufactured iron, soap, oil, &c.

Question 3. By what lines are the rates of transportation established to competing points in the South for freight coming from the West?

Answer. All the lines named in my answer to question 1 are interested in and exercise their influence upon establishment of rates; but in most instances, roads terminating at competing points can and do control the rates from point of shipment. For example, the rates from the West—Saint Louis, Chicago, Louisville, to Montgomery—can be determined by the three lines terminating at Montgomery, if they desire to do so, viz, by the Louisville and Nashville Railroad, (South and North Alabama Railroad,) the Western Railroad of Alabama from Selma to Montgomery, and the Mobile and Montgomery Railroad.

The terminal roads, however, *generally* consult and co-operate with their connections in determining such rates. But where there are a number of lines connecting with one common trunk road which terminates at a competing point, the connecting roads often compete with each other, and the terminal road may not be able, or may not consider it to its advantage to control the rates. In that case it charges either its full local or some arbitrary rates to all its connections, and takes no part in the competition.

Under these circumstances it becomes more difficult, perhaps impossible, to maintain any fixed rates at competing points.

To illustrate the subject further, referring to the establishment of rates at Montgomery:

The Louisville and Nashville Railroad may control such of its feeders at Nashville and at Decatur which depend upon that road for connection with Montgomery; but others—for example, the Saint Louis and Iron Mountain, or Illinois Central—can reach Montgomery via Cairo, Meridian, and Selma, and may combine with one or other of the roads terminating at Montgomery in the establishment of rates to that point.

The steamboats on the Mississippi River, or the barge-lines from Saint Louis to Vicksburgh and from Saint Louis to New Orleans, can establish the rates to these two points so as to influence the total rates to Montgomery.

It therefore requires the co-operation of all the various lines named, and not only those terminating at Montgomery, to establish and maintain rates to that city.

The action of one influences that of the others. It must appear that it is a most intricate and difficult work to make agreement in regard to the establishment of common rates to competing points, where the interests are so diversified, and still more difficult to maintain the same.

The rates established to Montgomery determine the rates to Atlanta.

Certain relations in the rates to these cities have to be maintained in order to secure to each the advantages of its geographical position.

The railroads more particularly interested in the business of Atlanta and not interested in that of Montgomery—for example, the Nashville and Chattanooga, and Western and Atlantic Railroads—must take care that the rates to Atlanta are kept in line with the rates to Montgomery, so that business is not diverted from Atlanta to Montgomery.

At Atlanta the three systems of western lines, from 1 to 14, come in competition with the system of the eastern lines; the rates on western produce shipped via Baltimore to Atlanta by the southern trunk lines must therefore be made to conform to the rates that may have been established by the western lines from Saint Louis to Vicksburgh and New Orleans, or *vice versa*, the latter lines have to conform to the rates established by the eastern lines.

It will be seen that the rates established by steamboats on the Mississippi River control and influence the rates via ocean steamships, and *vice versa*, showing the mutual dependence of distant lines upon each other in the establishment and maintenance of rates. Although these lines may not come in direct competition with each other, yet are affected and controlled by the competition between the different commercial communities, and as above illustrated in the case of Montgomery and Atlanta.

Question 4. Is it your opinion that the competitive elements, as between railroad interests in the Western States, are being increased or reduced in number?

Answer. Competition between the transportation lines from the West to the South has been very much increased during the last four years.

The construction of the road from New Orleans to Mobile and from Mobile to Tensas River has opened a new line to Montgomery and interior points east, in connection with steamboats and barges on the Mississippi River.

The construction of the Iron Mountain Railroad from Saint Louis to Belmont completed the first all-rail line from Saint Louis to the South. Two other rail lines have since been established from Saint Louis, one working via Illinois Central Railroad to Cairo and connecting there with the New Orleans, Saint Louis and Chicago Railroad,

and the other the Saint Louis and Southeastern Railroad via Evansville and Henderson to Nashville.

The extension of the New Orleans, Saint Louis and Chicago Railroad from Jackson, Tenn., to a point opposite Cairo has given all-rail connection to Chicago and the whole Northwest.

Chicago has now three all-rail lines to the South, viz: via Louisville, Evansville, and Cairo. Freight-cars run through without change of bulk from Saint Louis and Chicago over the routes named to all points South.

It is not likely, considering the comparatively small traffic, of which I have furnished statements in answer to questions 4 and 5, that additional competing lines will be constructed in the immediate future.

There is, however, one more line now being built for the purpose of entering in competition for the southern trade—the Cincinnati Southern Railroad, from Cincinnati to Chattanooga.

Question 5. What is the effect of the construction of new roads intending to compete for business with the existing lines upon rates and cost of transportation? Under what condition and to what extent will the construction of competing roads be beneficial to the general interests of the people?

Answer. The increase in competing lines may, and does generally, have the effect to reduce the rates of transportation and the revenue of railroads; but this reduction does not necessarily or always follow, because an agreement between the competing lines may be formed by which rates may be maintained or increased, instead of reduced.

In the consideration of this subject one important fact should always be kept in view, viz, that the effect of the construction of a greater number of railroads than are necessary to accommodate the traffic is to increase to a great extent the cost of transportation. The interest on the cost of *two* roads built for the purpose of transacting the business that could be transacted by one and the cost of maintaining *two* roads is of course twice as much as the interest on the cost and the cost of maintaining one road.

This portion of the cost of transportation, which is entirely independent of the amount of business performed, (interest and maintaining of road,) forms from 40 to 60 per cent. of the whole cost of transportation. It follows, therefore, that for every additional road built for the purpose of transacting the business that could have been accommodated by a road already built, the cost of transportation is increased from 40 to 60 per cent.

The true and proper plan therefore to *cheapen transportation* is to concentrate the business of the country upon the fewest number of railroads.

It is generally overlooked that while the multiplication of competing lines may have the temporary effect of lowering rates, yet the tendency is toward an increase.

The railroad companies will always endeavor to re-imburse themselves, at least to the extent of the cost of the service, but should existing conditions prevent this, then the proprietors of the road become losers, while shippers may profit by the lower rate, or may not be obliged to pay higher rates.

Some one has to meet the losses incurred. The construction of competing lines can only be justified from an economic point of view if the reduction in transportation-charges that may follow results in an increase of business sufficient to compensate for these losses.

The restrictive and exclusive policy of some railroads in refusing the use of their roads, or part of their roads, to connecting lines upon equitable terms, (when by such use they might become competitors,) has forced the construction of new roads not needed, and the desire of commercial communities to exclusively control lines of transportation has had the same effect, and has resulted in great injury to the country, by increasing the cost of transportation and the tax that has to be levied upon commerce or upon the parties who have invested their money in railroad property.

The traffic not being sufficient to justify the construction of so many roads and to maintain the same, railroad property has greatly depreciated, and this depreciation has reacted in many ways injuriously upon other important interests of the country.

From these considerations and the past experience the lesson should be learned that, in order to *cheapen* transportation, the traffic should be concentrated upon the existing roads. The plan which is generally proposed to build additional roads in order to *cheapen* transportation must have the contrary effect from that intended.

New roads should only be built in cases where the existing roads are not so located or of sufficient capacity as to accommodate the wants of the people.

This subject may be illustrated by reference to the Cincinnati Southern Railroad, already referred to. This road is being built to compete for the southern traffic with thirty-six existing lines, which I have enumerated in answer to question 1.

Cincinnati is already connected by rail with all points in the South. The construction of the Southern Road opens no new country except that immediately upon the line of the road.

The total western traffic in a southern direction, if concentrated upon one road, would yield a revenue of $7,867 per mile. Only a portion of this can possibly be carried by one of the thirty-four competing lines, including in this number the Cincinnati Southern Railroad.

The portion now carried over the Louisville and Nashville Railroad, both south and north, including the whole of the shipments made by Cincinnati, yields a revenue of $6,040. (See answer to question 5.) In this is included the revenue derived from the Nashville business proper, which city is not accessible to the Cincinnati Southern Railroad; also Memphis, to which point the Cincinnati Southern Railroad cannot compete with a rail line 163 miles shorter and with the river.

The rates established by river being very low, hardly in excess of the cost of transportation over the shorter rail lines, would therefore not be sufficient to pay cost over the longer line. The revenue derived from Nashville and Memphis business per mile of road for the year 1875 was (see report of Louisville and Nashville Railroad for that year, pages 169 and 170) $1,330; this, deducted from $6.040, leaves $4,710; the amount per mile of road for which the Cincinnati Southern Railroad will compete with the existing line via Louisville.

Cincinnati now contributes to this revenue (pages 169 and 170 of Louisville and Nashville Railroad report) $982 per mile of road, or 21 per cent.

The total gross revenue of the Cincinnati Southern Railroad from the present Cincinnati business to all points in the South that can be reached by it (the length of the road from Cincinnati to Chattanooga being 340 miles) will be $340 \times \$982 = \$333,880$.

The question arises to what extent can the southern business of Cincinnati be increased in consequence of the opening of this new line of communication?

This will depend in a great measure upon the changes which may be effected in favor of Cincinnati in the rates of transportation.

Bearing in mind that the Cincinnati Southern Railroad cannot control rates beyond Chattanooga, the terminus of the road, that rates to points beyond are determined by mutual agreement between all the competing lines and the trunk lines to which they are common feeders, and that it is in the power of competing lines, no matter what rates may be established from Cincinnati, to maintain the present existing relative rates from competing cities, (from Louisville, Chicago, and Saint Louis,) it can hardly be expected that any additional advantages can be derived by Cincinnati over rival cities on account of the construction of this new road.

The rates of transportation now charged are reasonable in themselves.

I have shown, in answer to questions 4 and 5, that the average charges on south-bound freight over the Nashville line was 1.87 cents per ton per mile, and on north-bound, 1.23 cents; on the Memphis line, south-bound, 1.5 cents, and north-bound, 1.08 cents.

The average cost of transportation on the Louisville and Nashville Railroad for the year 1875 was 1.23 cents, (exclusive of interest,) showing the profits to cover interest on investment are not excessive. It is reasonable to suppose that on the new road rates will not cover more than cost of transportation, passing, as it does, through country affording little local business. It is also reasonable to estimate that the local freight and the passenger traffic will hardly pay more than cost of operation through a thinly-settled country.

If this view of the case is correct, and assuming that the road is being constructed exclusively for the purpose of competing for the southern freight business to points beyond Chattanooga, it follows that the cost of shipping all freight between Cincinnati and Chattanooga, which is now being shipped by Cincinnati, $333,880, will be increased by the interest on the cost of the road, which, at 8 per cent. on $16,000,000, is $1,280,000 per annum; in other words, the construction of this additional competing railroad line will increase the cost of transportation of the competitive business nearly five times.

It is true that the shippers (the producers and consumers) who use the road do not pay this additional amount, but the citizens of Cincinnati or some one else will have to pay it.

The service might have been performed by the existing lines of transportation with some profit, while hereafter the gross revenue from it may be consumed in operating expenses upon a new road and leave nothing for the payment of interest on the investment.

There is not only a waste of new capital, but the capital already invested in the existing roads is made less remunerative. It is a subject of great national importance to prevent the waste of capital, no matter by whom it is wasted, or whose capital it is, whether home or foreign. Large investments in railroads have and are being made without regard to facts and considerations of the nature which I have here presented.

I have merely referred to this special case for the purpose of illustration, to show how the construction of competing lines may affect the cost of transportation and the interest of the people. It is not maintained that the conclusions arrived at in this particular case are strictly correct, (although I believe them to be nearly so.) I merely

intended to show the method which should be applied to the consideration and investigation of such subjects. I have purposely stated the facts and assumptions upon which the estimates are based in order that their correctness may be tested.

There are, of course, many other elements of a local nature that enter into the consideration, but I have merely confined myself to the main features.

It cannot be definitely ascertained what may be the increase of business to the road or to the community it serves; but even supposing that this business could be doubled or trebled, and also that it would yield the usual profit beyond cost of operation, the sums so realized would not go far toward the payment of the interest on the investment.

The increase of business must, however, be limited, considering that there are already 36 transportation lines contesting for a traffic that could be readily accommodated by any one. The great importance of collecting statistical information in regard to the extent, character, and volume of commerce between the different sections of the country, for the purpose of determining the necessity of further transportation facilities, becomes apparent from the considerations here submitted.

It is, in a great measure, due to a want of such statistical information, or to its disregard, that the large amount of capital has been wasted in this country, the effects of which are now seriously felt in the depressed condition of all the industries and commerce of the country.

Question 6. Please to state your views as to the propriety of the policy of a road entering into special contracts with parties proposing to erect large manufacturing establishments on the line of their roads to carry freight at less rates than for the public generally, the object being to wait for profits likely to arise from the general development of business in consequence of the erection of such works.

Answer. I do not think that a common carrier has the legal right to enter into special contract with manufacturing establishments to carry freight at less rate than for the public generally, for the purpose of encouraging the erection of such establishments on the line of its road.

It is not the province of railroad companies to make themselves partners in private enterprises. Even if they had the legal right, it is questionable whether it would be good policy for them to do so.

The same articles of freight should be carried at the same rates between the same points. If coal is carried from A to B for a blast-furnace at B at a certain rate, it should be carried for the same rate for a party at B, who consumes it in manufacturing flour. Both parties benefit the railroads, and it is impossible to draw a line of distinction and to grant privileges on account of the degree to which railroad companies may be benefited by different shippers. Such policy would lead to many complications and unjust discrimination. Nor do I think it right that common carriers should make special contracts on account of the quantity shipped, except when quantity forms an element in the cost of the transportation service, and this is only the case when the quantities are less than car-loads.

It does not cost more to carry ten car-loads of freight between two stations, A and B, for one shipper than it costs to carry one car-load for each of ten shippers.

The railroad company derives as much benefit from ten small manufacturing establishments as from one large one of the capacity of ten smaller ones.

If the railroad company grants to the larger establishment lower rates of transportation, it would unjustly discriminate against parties with limited means, and be of no benefit to the railroad company.

A common carrier should strictly adhere to the rule to charge the same rate for transportation for the same articles between the same points, only discriminating on account of quantity as far as it influences the cost of transportation. He should not make any arbitrary distinctions merely depending upon his will.

Discrimination in rates of transportation should be based upon conditions and facts which cannot be controlled by the railroad companies, and upon principles recognized as correct in all other business transactions.

I have more fully explained the subject of "just and unjust discrimination" in my report of the operation of the Louisville and Nashville Railroad Company for 1873–'74, page 55, to which I respectfully refer.

Question 7. Please to describe in general terms the nature of the competition existing between rival transportation lines from Boston, New York, Philadelphia, and Baltimore, to the Southern States? What lines influence or control the competitive rates from Boston, New York, Philadelphia, and Baltimore, to the Southern States? (See map No. 13.)

Answer. It requires the co-operation of all the lines named in my answer to question No. 1 to establish rates of transportation to competitive points in the territory named, as will appear from the following explanation:

The rates between Boston and Chicago determine the rates between New York, Philadelphia, Baltimore, and Chicago. The roads interested in the business of each of

these cities must maintain certain relations in the rates in order that one city may not secure undue advantages over the other.

The rates to Chicago from the eastern cities determine also the rates to Saint Louis, Cincinnati, and Louisville, upon the same principle.

The last-named cities are connected by navigable rivers with Memphis.

The rates to Memphis are established by adding to the rail-rate to Louisville, Cincinnati, and Saint Louis, the river-rate from these cities to Memphis. The Memphis rate determines the Nashville rate.

The railroads centering at Nashville must see that Memphis does not enjoy advantages over Nashville by which the trade, which the latter city claims as its own, is not transferred to Memphis. Thus Nashville, although situated in the interior, removed from the Mississippi River, partially shares with Memphis the advantages of river transportation.

The Nashville rate influences, in obedience to the same principle above referred to, the rates to Chattanooga, Atlanta, Montgomery, Selma.

At these last-named cities, including Nashville, Memphis, Vicksburgh, Meridian, the northern trunk lines which reach these places via Louisville come in competition with the system of southern trunk lines via Richmond, Norfolk, Wilmington, Charleston, Port Royal, Savannah, Brunswick by sea, and from there to all interior points via rail.

The rates to New Orleans and Mobile are controlled or influenced by the ocean steamship lines, and the rates at Montgomery, Selma, and other interior points are again influenced by the rates to New Orleans and Mobile established by the ocean steamship lines.

From this general statement it appears that the establishment of rates to the South requires the co-operation of the many transportation lines which I have named. The action of one influences that of many others.

The most northern lines between Boston and Chicago can influence the rates to the Gulf States. When rates are changed from New York to Chicago and New York to Louisville, the southern trunk lines from New York to Atlanta, Montgomery, &c., have to conform to them, and *vice versa*.

The ocean steamship lines from New York to New Orleans exert their influence upon rates to the interior, Montgomery, Atlanta, &c.

The steamboat lines on the Ohio and Mississippi Rivers exert their influences upon rates to Memphis, Nashville, Chattanooga, and Atlanta. The steamship lines (and sailing-vessels) between the northern and southern Atlantic coast cities exert their influence upon rates to the interior points in the South.

No rates can therefore be firmly established and maintained except with the co-operation of all the parties who can thus exert their influence upon the same.

The great difficulty of establishing and maintaining uniform rates of transportation throughout the country becomes apparent from this brief and general view of the situation of the competing lines. Under the present system of the management of competitive business of transportation lines and from the want of systematic co-operation between so many parties interested in this subject, nothing else can be expected but the constant fluctuation of rates, railroad wars, and unjust discrimination.

Concert of action and co-operation become absolutely necessary in order to establish rates of transportation upon a proper basis and to maintain the same with some degree of permanency.

Question 8. State the principle upon which competitive rates should be established by transportation lines, the principal method by which they are established, the means employed to maintain the same, the reason why they are so frequently broken; also state the cause of railroad wars and their effect upon the public interests.

Answer. I have referred to the mutual dependence of railroad companies upon each other regarding the establishment of competitive tariffs.

The right of each company to regulate and change its own tariff without regard to the interests of another road cannot be denied, but this right is not only possessed by one but by all. Let us suppose that in its exercise one road changes its tariff to-day and another to-morrow, another the next day, and so on—the action of one affecting the interest of all the others—the injurious effects of this separate and independent action would be felt by all.

It becomes, therefore, a matter of mutual interest, almost an absolute necessity, in order to adjust properly the railroad tariffs of the country, that the various lines of transportation competing for the same traffic, or whose tariffs are influenced by each other, should act in concert.

They should give each other timely notice of the changes proposed to be made, so that all may be able to conform thereto. This is the correct theory upon which competing transportation lines should and generally propose to act. This co-operation is not in conflict with the laws of the country or with public interest, as is generally supposed. On the contrary, it is beneficial to both the public and railroad interest.

The work of establishing the competitive tariffs of railroad companies, and of trans-

acting other business in which they are mutually interested, is usually performed in meetings or conventions of the representatives of the interested companies.

The conventions are called from time to time, as the necessity for changes or re-adjustment of tariffs may arise.

The difficulties of bringing together from all parts of the country at one time and at one point the representatives of a great number of transportation companies are not a few. These officers are generally fully occupied at home, or they may have previous engagements. The officer competent to represent a certain road may sometimes be required (if the business relations of his company are complicated) at two or three different conventions at the same time, or so near together that he cannot attend at all. It may and does frequently happen that the representative of a road whose presence was absolutely necessary to transact any business at all, does not appear. When this is the case, the convention adjourns and agrees upon some other place and time of meeting, perhaps with no better result.

It often happens that officers of transportation lines are chasing each other over the country, endeavoring to meet and transact important business, but practically accomplishing nothing. After many repeated trials, the conviction settles itself upon the minds of many that it is useless to repeat these abortive attempts, and that time and expenses involved might as well be saved.

The important questions, upon the settlement of which the proper conduct of the transportation business depends, are not attended to, and matters are allowed to take care of themselves. But in case the interested parties come together, a day or two only generally is set aside to transact business that is often of a very complicated nature, arising from the direct conflict of so many interests. For want of more time the work is often imperfectly done, if done at all. In case of disagreement, there is no one to decide between the parties. The majority cannot and ought not to dictate to the minority. The result in many cases is that the questions or issue remain unsettled and no agreement can be made. But, assuming that an agreement is at last consummated, the most difficult part of the work remains yet to be done. How is the agreement to be carried into effect?

There is no authority to compel adherence to it, no court in which the violator of it can be held responsible or punished.

The agreements hastily formed are often understood differently by the different parties and executed in the various ways in which they are understood.

There is no central office from which the proper interpretations could be enforced alike. One party may consider that the other is violating the agreement and absolves itself from adherence. The result is the same as if no agreement had been made.

Supposing, however, that an agreement relative to the establishment of competitive rates is made and understood alike by all parties, should it then appear to one or the other party, after a short experience, that it does not receive as much business as it expected or wanted, and such conclusions are generally arrived at, it either openly repudiates the agreement or more frequently violates it secretly by paying commissions or rebates, or by the use of other means of deception.

The other parties very soon suspect that they are not fairly dealt with. This mere suspicion is often considered sufficient for adopting means of self-protection, generally corresponding in character with those the other party employed, or is supposed to have employed.

The result is that, either openly, more often secretly, by means which are considered dishonorable in the ordinary transactions of life, one competitor is underbidding the other. The rates of transportation fluctuate; they become lower and lower; influential shippers are secretly favored by low rates, enabling them to secure advantages over the competitors and to monopolize certain branches of business altogether. All this is done in direct violation of the laws that should govern common carriers.

The shippers cunningly encourage dissension among the agents of competing lines, ingeniously working upon their credulity and suspicion by hints or direct misrepresentations, and hardly ever fail to obtain a reduction in the established rates of transportation which had been agreed upon and were considered reasonable and proper by all of the competing transportation lines.

After a period of low rates caused by this process of underbidding, during which the railroad companies usually work for less than cost, it is found necessary by them to make another effort to secure remunerative rates, and, if possible, by higher rates to make up for past losses.

New conventions are called and held, new agreements formed, and they are violated again as before, and so on. This history of the management of the transportation business is thus constantly repeating itself, to the great injury of the people and the proprietors of the roads.

The general managers or heads of the departments attend generally to the establishment of rates and make agreements with each other; and to this extent, but no further, this important business may be said to be under their control; but no sooner is it believed that one or the other competing lines has violated the agreement and tries to

deceive, whether this be a fact or not, the management is of necessity surrendered into the hands of subordinates, the soliciting commission-agents, to whom the general instructions are given to do as others are doing, or supposed to be doing, or to make any rate they please, no matter how low. From that time on the general managers and the owners of property have lost all control over it.

The result is, fluctuations in rates, unjust discrimination between shippers in the same locality, or between shippers in different localities.

Rebates are generally paid and special contracts are secretly made, all in direct violation of the law that should govern common carriers. There are other causes which lead to the same result.

If a controversy arises between any two or more railroad companies upon any subject whatsoever, and they cannot arrive at a satisfactory adjustment, one or the other party commences a system of warfare upon its opponent by establishing unusually low rates of transportation over its own line, and thus compels the other to conform to the same in the hope of inflicting losses upon it to a greater extent perhaps than the amount of money involved in the controversy. Or this warfare may be undertaken as a preliminary step to negotiations, or for the purpose of establishing again the fact, of which each party is already well aware, that it cannot ignore the existence or the rights of the other.

That this mode of settling controversies between intelligent people is yet practiced in this civilzied age can only be accounted for by the fact that property which is thus being unnecessarily sacrificed is not the property of the parties who manage it.

If it were it is reasonable to assume that ere this means would have been devised by which controversies between railroad companies would be settled in a manner less wasteful and more in accordance with the spirit of the present civilization. Since the absence of such means the practice now so frequently resorted to is, however, unavoidable.

Were the injurious consequences of these wars confined only to the combatants, it would be less objectionable, but innocent parties become involved. Railroad companies which are not concerned in the controversy are necessarily drawn into it, and often sustain great losses, and the people greatly suffer from these contests. This, however, is not generally understood, on account of the immediate temporary advantages which are gained by *some* parties by the lowest rates; the subsequent and permanent disadvantages under which all, more or less, suffer are not considered.

A proper distinction should be drawn between healthy competition, regulated by natural laws upon correct principles, and competition which is merely the result of mismanagement.

Healthy competition is continuous in its operation. The effect of railroad wars, or railroad mismanagement, in reducing rates is spasmodic. The natural laws of competition do not regulate changes in the tariffs. They depend often upon the mere will of a single railroad manager or may result from an obstinate and unreasonable quarrel between a number of them. Personal pride and prejudices not unfrequently have something to do with it. The people cannot, therefore, foresee and provide against changes which affect so seriously their commercial relations and interests. The market value of articles of commerce becomes unsettled, the risks of all commercial transactions (depending upon transportation charges) are greatly increased, the proper adjustment of tariffs between commercial communities is disturbed, and trade diverted from its accustomed channels. The transportation taxes are borne unequally by different localities, giving undue advantages to some, and unjustly discriminating against others.

Low competitive rates make higher local rates necessary. Unreasonably low rates are used as a standard of comparison, by which the higher rates, although they may be reasonable in themselves, appear extortionate.

Rates of transportation should be reasonable; they should be uniform and permanent, as nearly as the conditions of cost and the natural laws of competition permit; they should be alike to all parties situated alike, and should be properly adjusted, so as not to discriminate unjustly between different individuals or communities.

To attain these objects under the present management of the competitive transportation business is simply impossible.

Intelligent co-operation between all the transportation lines which can influence the tariff, under a proper organization and regulations, becomes absolutely necessary.

Whether this co-operation can be secured by the voluntary action of the transportation companies is doubtful. Governmental supervision and authority may be required to some extent to accomplish the object in view.

Question 9. The following inquiries relate to the constitution, objects, and modes of doing business which characterize the railroad bureau of which you are now at the head:

(*a*) What are the evils which the proposed bureau is intended to prevent, and the benefits which it is intended to afford both to the roads interested and to the public?

(*b*) Will the defection of one or two important lines prove fatal to the plan, as in the case of the Saratoga compact?

(*c*) Has the decree of the bureau any validity in law so long as roads remain within the league?

(*d*) Will the bureau have the power to maintain classifications to prevent the cutting of rates and to prevent railroad wars? And, if so, by what legislative enactment or under what general incorporation act?

Answer. I have referred, in answer to previous questions, to the evils which the organization known as the Southern Railway and Steamship Association is intended to prevent.

Not only the public suffer from these evils, but from the causes which produce them the proprietors of railroads greatly suffer.

They have little control over their property in the management of the competitive business. To secure this control at all times and to enable the proprietors to manage their property intelligently in their interest, as well as in the interest of the public, the association was formed.

I herewith submit a copy of the articles of agreement between the several transportation companies, parties thereto. I herewith make part of my answer a copy of the agreement, an article which I prepared for the Railroad Gazette explanatory of the principal features of the plan of the organization and its operation, and point out to what extent the aid of the Federal Government may be required to carry more completely into effect the operation of the organization:

"In articles 1 to 3 of the constitution, the object of the association is stated. It will be seen that the members agree merely upon a specific mode or system in which they propose to transact that portion of their business in which they may be concerned together and in the proper conduct of which negotiations and co-operation become necessary.

"Articles 4 to 13 provide for the manner in which the regulations and rules for the conduct of the business are to be established, or changed from time to time as occasion may require, also for the appointment of an officer who is to be called the general commissioner, and whose duties are prescribed in articles 14 to 27.

"These duties are of a threefold nature:

"1st. The general commissioner is the head of a bureau through which the members transact all their business of the character named above.

"This bureau becomes the central office of the members. Instead of each company attempting to transact directly its business with every other, almost an impossible undertaking when many companies are concerned, (there are 25 members of the association,) they correspond directly with this central office and carry on their intercourse and negotiations through it. This avoids to a great degree the necessity of transacting business through conventions, an expensive, time-consuming, and at best a very unsatisfactory mode, especially as these conventions can only be held periodically, while business can be transacted with great promptness through the bureau at all times.

"In this respect, even without any further measures, the establishment of a bureau by transportation companies having intimate business relations would be a great improvement in facilitating their intercourse, and lead to a more intelligent and satisfactory management of their business.

"The information collected by the bureau upon all subjects that can bear upon the negotiations and subjects of co-operation enables the commissioner to take a more general view of the whole field of operations, and to form a more intelligent, impartial, and correct judgment of the course which it would be best for each company to pursue, with due regard to the rights of others. Acting as an advisor and mediator between the members, many complications, which in intricate and complicated business transactions (especially between parties living far apart) arise from a want of a proper understanding, can be thus avoided.

"2d. If the necessary agreements cannot be reached in the manner proposed, the general commissioner is to decide as an umpire all questions of conflict between the members and thus avoid the expensive warfare now generally resorted to in such cases.

"His decisions are subject to be revised by a court of appeal or board of arbitration.

"3d. It is the duty of the general commissioner to see that all the agreements which have been made, or his decision, or the decisions of the court of appeal, are carried out.

"Agreements between railroad companies are generally made in conventions of the officers. For want of time they are hardly ever thoroughly considered and are generally understood differently by different parties, and executed as they are understood; hence they are generally broken as soon as made. The impossibility of carrying out agreements between railroad companies is not always the result of bad faith or dishonesty on the part of the contracting parties, but is frequently due to the want of a proper organization and to the employment of improper means to accomplish the end in view. It should not be expected that an agreement made between a great many parties in regard to complicated business transactions can be carried out without some

executive head, whose duty it is to see that each party adheres to it, or to fix the responsibility in case of violation.

"It is with a view to correct this defect in the present mode of transacting business between railroad companies that the general commissioner is made the executive officer, charged with the duty and empowered to enforce the agreement made between the members of the association.

"While this does not prevent intentional violation, yet it removes many of the causes which lead to disagreement and disruption. In the course of time it may be expected that by these means confidence between the members will be established, the want of which in each other is really one of the greatest causes of dissension and trouble.

"The three specific duties of the general commissioner which I have named above are to be performed by an officer of experience, accustomed to deal with all questions arising in the practical management of the transportation business. This officer should at least be the equal in intelligence and capacity to the chief managing officers of the railroad companies members of the association.

"It will be observed, from a careful reading of the articles of the association, that the association, as a body, does not prescribe any particular policy or line of conduct regarding the management of the business of the members, but merely determines the mode, rules and regulations according to which the members are to transact business with each other. The particular measures to be adopted upon any subject of action are to be determined by the interested parties themselves in each particular case as it may arise. The majority of the association, however, does not dictate terms to the minority regarding questions of management or the conduct of business. In case of disagreement and conflict between the members, the question at issue is not to be decided by a majority of the contracting parties, but is to be submitted to the decision of a disinterested umpire, or to a board of arbitrators.

"The full legislative and directing power—if I may use these terms—remains, therefore, in the parties at interest. This power is only restricted in case of conflict, but this restriction is imposed by judicial proceedings and not by the numerical strength of the contending parties.

"It will appear from this that the association is formed upon the plan of a representative government with a legislative, judicial, and executive department. The legislative department is constituted by the members of the association. As long as they can agree with each other, the general commissioner exercises only his advisory and executive powers. In case of disagreement between the members, his duties become of a judicial character. He does not control, prescribe, or direct, but merely advises, adjudicates, and executes.

"Uniting these offices in one person he can act promptly in all matters that come before him, without interruption in the regular course of conducting business.

"In the absence of any one of the members he is empowered to act for it, upon all subjects upon which his decision as umpire would be binding on said member.

"The delays frequently occurring on account of the impossibility of bringing all the interested parties together for the purpose of negotiating agreements are thus avoided.

"I have called attention to the above essential features of this organization in which it differs from other organizations formerly proposed and which had a similar object in view.

"Their failure was no doubt due to the fact that the business of the members was to be arbitrarily directed by a majority of the members or by commissioners who were not in a position to understand or guard the rights and interests of all and every member. It could, of course, not be expected that railroad companies would submit to the dictation of others who might have no direct interest in their affairs, or whose interests might be adverse.

"In the organization which I have described, full control is given to each member over its own affairs; only in case of conflict with others it submits voluntarily to the adjudication of a court of justice, in the election of which it participates.

"There is another important feature of the organization to which I will call attention.

"I have referred to the fact that the organization as a body does not prescribe any particular course of action in regard to the conduct of the business of the members. Disagreements therefore between the members in regard to any particular transaction or disobedience to the rulings of the arbitrators do not affect, in any way, the organization itself, but merely that particular transaction and the parties that may be directly or indirectly interested in it.

"Nor does the withdrawal of any one or more of the members dissolve the association. As long as two members remain they can continue to transact their business with each other under the rules of the association and derive some advantage therefrom.

"The plan of organization is not restricted to any particular number of members; from two upwards it may embrace all the railroads in the United States. The associa-

tion contains, therefore, the elements of self-preservation and growth. It can adapt itself to the conditions and circumstances which are likely to occur, and under which it has to operate.

"If agreements are not adhered to by the members, or submission to arbitration is refused, the usual mode of settling difficulties between railroad companies has to be resorted to. The members of the association acting as a unit under its rules may be able to prevent warfare, or at least restrict it within narrower limits. Organized resistance or offense must be more successful than if each member acted upon its own account and fought indiscriminately foes and friends, as is now generally the case. The strength of the association consists therefore in the power and facility to combine all members who desire to carry out their agreements against those who do not.

"It will appear from these explanations that the mere establishment of the association cannot be expected to remove at once all the evils and defects in the present management of railroads which it is intended to overcome.

"Its object is merely to prescribe a method in which the complicated business between railroad companies can be systematically and efficiently transacted, and to substitute intelligent consideration of all subjects of mutual interest, and fair and just adjudication of all conflicting claims, in place of the ruder method of settling controversies between the railroads by warfare, so destructive to the best interests of the people and of the proprietors of the roads.

"The operation of the association must, therefore, not be considered automatic, but its success depends in a great measure still upon the degree of intelligence of the managers of the roads, and more especially upon their good faith to each other, because their compliance with the rules of the association and with the agreements made under it is entirely voluntary and cannot be legally enforced.

"To secure the permanency of such associations it would be desirable to constitute the members a legal body by act of incorporation, making the articles of association legally binding upon its members. This is the plan pursued in the organization under which the business of single railroad companies is conducted.

"If the stockholders of such companies were allowed to exercise a direct control upon the management, each in his own private interest, the result would be disastrous to the best interests of the companies. The stockholders therefore elect representatives, whose acts, in accordance with the articles of association, become legally binding upon each. These representatives, it may be said, act as umpire between the individual owners; they look to the interest of the whole as a whole and disregard the interest of the individual when in conflict with the general interest.

"This is the only mode in which the business of a great many parties having separate private interests, but all united for the attainment of one common object, can be managed.

"The same principle should be applied to the management or government of the whole railroad system of the country. The several railroads constituting this system have interests adverse to each other, yet they have one object in common, and this is the proper management of the transportation business of the country, so as to secure the best possible results to the people, with due regard to the rights of the proprietors of these roads.

"This object can only be attained by the co-operation of the railroad companies under some sort of government with sufficient power to regulate and restrain the action of individual companies so far as necessary for the welfare of the whole and the attainment of the final object.

"As an important step toward the establishment of such a government, I propose that the Federal Government legalize (incorporate) organizations formed by the railroad companies upon the plan which I have described and for the purpose mentioned, (of course under proper restrictions,) and to make the action of the judicial and executive officers of the organization legally binding upon its members.

"Railroad companies would soon find it to their interest to form themselves into such associations and transact their business with each other upon more correct principles than is now the case.

"When a number of such associations are formed, they could be united again under a central organization, and thus a complete representative government of the whole railroad system of the country could be established, by which the intelligent management of this great property in the interest of the people as well as the interest of its proprietors may finally be secured.

"A representative government or self-government established under the authority of the United States over the railroad system, upon the theory and general plan here proposed, seems to me the proper solution of the railroad problem in this country.

"Direct governmental control, without governmental ownership, such as has been attempted in some of the Western States or as was proposed by the House of Representatives in its last session, does not remove, but rather increases all the difficulties

and evils of the transportation business which it sought to remove, and is, moreover, a direct violation of the property rights of the owners of the road.

"The ownership of all the railroads of the country by the Government is the only just plan by which the Government could exercise a direct and complete control over this property.

"This plan, however, which is now to be put into execution in the German Empire, is not adapted to the institutions of this country. Even if it were, it possesses many disadvantages as compared with a representative and self government.

"The representative government gives full liberty of action in the management of the affairs of each separate road, as far as not in conflict with the general interest, and hence more regard can be paid to the development of local interests.

"Under a representative government each separate company can exercise its full influence upon the management of the whole system. The great variety of interests, frequently in conflict with each other, being able to exert themselves in their full power in this government, would make combinations looking toward monopoly or extortion impossible.

"The principles of competition would still remain in force, but this competition would be regulated intelligently and in accordance with natural laws. Under a representative government the property-rights of the owners of the roads are fully respected: the Federal Government does not assume to control the property itself, (as was contemplated by the appointment of nine commissioners who were to determine what compensation the railroad companies should receive,) but it merely prescribes regulations and the method in which the owners of the property shall control it in a legal manner, without interfering with the just rights of others.

"This is a proper function of the Government, which it not only may but should exercise.

"Under the representative government all of the advantages of a consolidated management may thus be secured and its disadvantages avoided.

"CONCLUSION.

"Accompanying this report I submit five maps, containing the following information:

"L shows the competing transportation lines from the West to the South and Southeast.

"M shows the competing transportation lines from the North to the Southwest.

"N shows the competing transportation lines from the Northeast to the Southeast, carrying western produce.

"O shows the competing transportation lines from Boston, New York, Philadelphia, Boston and Baltimore, to the South.

"P shows the railroad and steamship lines forming the Southern Railway and Steamship Association.

"All of which is respectfully submitted.

"ALBERT FINK.

"LOUISVILLE, *May* 1, 1876."

K.—*Agreement of the Southern Railway and Steamship Association, adopted in convention at Atlanta, Ga., September* 17 *and October* 13, 1875, *as revised November* 9, 1875.

"This agreement, made this 17th day of September, A. D. 1875, by and between the Western and Atlantic Railroad Company, the Central Railroad and Banking Company of Georgia, the Ocean Steamship Company of Savannah, the Southwestern Railroad Company, the Savannah, Griffin and North Alabama Railroad Company, the Mobile and Girard Railroad Company of Alabama, the Augusta and Savannah Railroad Company, the Eatonton Branch Railroad Company, the Philadelphia and Southern Mail Steamship Company, the Georgia Railroad and Banking Company, the South Carolina Railroad Company, the New York and Charleston Steamship Lines, the Richmond and Danville Railroad Company, the Piedmont Railroad Company, the North Carolina Railroad Company, the Atlanta and Richmond Air-Line Railway Company, the Memphis and Charleston Railroad Company, the East Tennessee, Virginia, and Georgia Railroad Company, the Western Railroad Company of Alabama, the Montgomery and Eufaula Railroad Company, the Wilmington, Columbia and Augusta Railroad Company, the Charlotte, Columbia and Augusta Railroad Company, the Wilmington and Weldon Railroad Company, the South and North Alabama Railroad Company, the Nashville, Chattanooga and Saint Louis Railway Company, and such other railway and other companies as may hereafter, by subscribing hereto, with the consent of a majority of the parties above named associated therein:

Witnesseth, that the said parties agree to form an association to be named the Southern Railway and Steamship Association, having its general office in Atlanta, Ga.

"The objects of the association are:

"1. To facilitate the transaction of business between said parties, and between said parties and other transportation companies, relating to such of their freight and passenger traffic in which any one of said parties is directly or indirectly interested with any other or others of said parties or with any other transportation company.

"2. To provide proper means to adjust promptly and amicably all differences that may arise between the parties on account of the traffic named in article first.

"3. To provide proper means to enforce effectively and promptly all agreements that may be entered into between the parties on account of the traffic named in article first.

"4. To carry out the object named in articles one, two, and three, the said parties agree to conduct the business of the association under the following organization: The members of the association shall assemble in convention once a year—the first Wednesday in October—and at such other times as are mentioned hereafter.

"5. *The business to be transacted in convention* is to change or amend the organization of the association, to elect its officers, fix their salaries, prescribe the mode of their election, the time of serving, their duties, and define their authority; to establish proper rules and regulations for their guidance, and to do all other acts necessary to carry out the object of the association, as specified in articles one, two, and three; but said convention shall have no authority to act upon any subject in which all the members of the association are not directly or indirectly interested.

"6. Each company member of the association shall be entitled to one vote in convention, and shall be represented in said convention by the chief managing officer or officers of said company, or by some other person or persons authorized by the chief managing-officer to act. If such authority is given, it must be in writing, clearly specifying whether said person is authorized to vote upon all subjects upon which said chief managing-officer has a right to vote; and if not, the particular subject or subjects; also, the length of time for which such authority shall continue. Such written authority (or proxy) is to be preserved in the archives of the association.

"Any road leased by any member of the association shall not be entitled to vote in conventions, but shall be considered in such matters as only a part of the road or company having it under lease.

"7. Members or their representatives, authorized as in article sixth, may also vote in writing upon any specific subject that may be before the convention. The letter containing the vote to be sent in a sealed envelope to the secretary of the convention, with instructions indorsed thereon that it is only to be opened in convention.

"8. It shall require a vote of two-thirds of all the members of the association to make their action upon any of the subjects mentioned in article fifth binding upon all the members of the association.

"No action shall be taken by any convention which changes or amends the established organization, or the duties and authorites of its officers, or any article of the agreement, without two weeks' previous notice, specifying the nature and character of the proposed change or amendment; but changes may be made in the regulations and rules, and other current business may be transacted in conventions, if not inconsistent with the articles of agreement, and necessary to carry out the objects of the association, without such previous notice.

"9. A president shall be elected at the annual convention for a term of one year, whose duty it shall be to preside over the conventions. A secretary of the convention shall also be elected at the annual meeting, to serve for the same length of time; he shall make a record of the proceedings of the conventions. The acts of the conventions, certified to by the president and the secretary, shall be communicated officially by the president to all the members of the association and its officers, who are to take cognizance of the same.

"Original copies of all the proceedings and acts of the conventions shall be preserved in the general office of the association.

"10. The president may call a special convention at any time he deems it necessary, or shall call it at the request of five members of the association. The object for which special conventions are called must be communicated at the time to each member of the association.

"11. An officer shall be elected to serve for such a time as may be agreed upon at the time of his election, who shall be called the general commissioner of the association.

"12. The association shall prescribe the duties which said general commissioner shall perform, and the authority which is to be given him; and each member of the association shall appoint said general commissioner its special agent to transact for and under instructions from said member, and in accordance with the duties assigned to said officer, under rules and regulations established by the association, all business with other members of the association, or with other transportation-lines, relating to the traffic mentioned in article first.

"13. Each member of the association shall designate one or more of its general officers, and specify the nature of the business which they, and no one else, are to transact for said member with the general commissioner.

"When practicable, each line of transportation formed by a number of members shall

unite in selecting one officer for the purpose mentioned in article 13, authorized to act for the whole line.

"14. The general commissioner is to make himself fully acquainted with the business relations of each member of the association, regarding the traffic mentioned in article first; and it shall be his duty to guard and advance the interest of each member the same as if he were its sole agent, but acting also as the agent of all the other members of the association, he is to act for each in a fair, just, and equitable manner, and endeavor to guard and advance the interest of each and all.

"15. If any special subject is to be acted upon, relating to the traffic mentioned in article first, he shall call together the properly-authorized officers of each member of the association who may be directly or indirectly interested in that subject, or he may ascertain by correspondence their views, and receive their instructions in writing.

"If the parties named in interest agree upon a course of action, it shall be the duty of the general commissioner, as the agent specially appointed by each company for that purpose, to carry out the agreement so arrived at.

"16. But should the parties mentioned in article fifteen fail to agree, then the commissioner shall decide the point or points upon which they may disagree, within the scope of the duties which are assigned to him as an arbitrator, as specified in article twenty-one. These points at issue shall be submitted to him in writing, and the decision shall also be given in writing, fully setting forth the reasons therefor. These decisions shall be preserved in the archives of the association.

"17. In case it is impossible to bring together all the members interested in any subject, which, in the judgment of the commissioner, has to be acted upon promptly, then the commissioner, if in his judgment sufficiently advised as to the views of the parties not represented to enable him to act intelligently and justly to such parties, may act for them within the scope of his duties as arbitrator, as defined in article twenty-one.

"18. Members shall not enter into any agreements relating to the traffic mentioned in article first, with transportation companies not members of the association, except through the general commissioner and under the rules and regulations of this association; but in all business transactions with companies not members of the association, in which only one member is interested, said member is not required to act through the general commissioner, or under the rules of this association.

"19. Any railroad or steamship company may enter the association, subjecting only a part, fully specified, of its traffic to be transacted under the agreement and rules of the association. The association shall deal with said company in regard to the part excluded in the same way as with other companies not members of the association, as provided in article eighteen. But should any action of said company, in reference to the excluded traffic, affect adversely the interest of any other member of the association, then such member shall be released, through the general commissioner, from the operation of this agreement and the rules of the association, as far as may be necessary for its own protection.

"20. The general commissioner shall have power to abolish all commission agencies of every nature and kind, both freight and passenger, as far as the payment of commissions affect alone the competitive business of members of the association; but if commissions have to be paid on account of competing lines not members of the association, said general commissioner shall enter into negotiations, and endeavor to contract on the part of all the members of this association for their discontinuance.

"21. It shall be the duty of said general commissioner to decide as arbitrator, as provided in articles sixteen and seventeen, the following subjects, when they cannot be agreed upon between the members of the association interested in the same; the equitable prorating distance to be allowed to water-lines, and the percentage due the several routes proper to be adopted in the distribution of receipts; the arbitraries to be allowed for terminal expenses, short roads, transfers, and extraordinary expenditures; the competitive rates between rail and water lines, both by steam and sail; and the regulation of rates between the various centers of competition when they discriminate against certain localities; the adoption of local rates protective of competitive rates; the proportion of business to be carried by each company or transportation line, when a division of such business has been agreed upon by the parties in interest; and the compensation to be allowed to parties carrying more than their proportion; and the adjustment of rates to secure to each party its proportion; and all other questions that may be submitted to him by any two or more of the members of the association.

"22. If any member of the association does not approve of the decision of the general commissioner, made under authority of articles sixteen and seventeen, it may appeal to a board of arbitrators, to consist of one person to be selected by each party interested in the question appealed, who, if two or any other even number, shall select an additional arbitrator, and the decision of a majority of such board shall be final.

"23. There shall be established a clearing-house under the direction of the general commissioner, to which shall be promptly furnished by each company, when called for, information and statistics needed for the faithful discharge of the duties of said general commissioner, who shall also have power and authority to examine or have examined

all books and papers of the various members from time to time, in any manner that to him may seem necessary to secure the proper observance of such regulations as are now or shall be hereafter prescribed by the association, and their being carried out in good faith, and shall have the right to call upon any auditor or other officer of any company for all information relating to any business transactions, payment of money which, in the opinion of the general commissioner, might have been used in violation of agreements.

"24. The general commissioner may employ such additional force as may be necessary to thoroughly conduct the business and the duties of his office, the expenses of which, the salary of the general commissioner, and his traveling and incidental and all other necessary expenses, shall be assessed by himself and paid monthly by each member *pro rata*, according to the gross monthly income from competitive business of the company. If any member of said company should fail to report such business, or if it appear fair and just to the commissioner that any other member who enjoys the benefit of the association in a greater degree than is indicated by the revenue from their business should pay a greater part of the expenses of the association, said commissioner shall, upon a fair and equitable basis, assess such member, the right of appeal to be reserved to him, as provided in article twenty-two.

"25. If the correct proportion of business on which the assessment is to be made cannot be ascertained monthly, or if members fail to report, the commissioner shall have the right to assess each member upon a fair estimate, and each member agrees to pay the amounts so assessed which shall be placed to its credit upon the books of the association, final settlements to be made as often as practicable upon the correct basis.

"26. When the commissioner makes a draft upon any member for its portion of the expenditures, as provided in articles twenty-four and twenty-five, he shall accompany it with a statement of the total amount required from all and the amount assessed upon each.

"27. The commissioner shall render to each member, monthly, a statement of the expenditures made by him on account of the association, and he shall keep vouchers, properly certified to, for each item of expense, in his office, subject to the examination of any member of the association, or committees that may be appointed for that purpose by the convention.

"28. In case of resignation or inability to act of the general commissioner, the president of the association shall appoint an acting general commissioner who shall discharge the duties of said office until other provision therefor is made by this association in convention, which convention shall be called for that purpose as soon as the president of this association shall find it practicable, not to exceed twenty days after vacancy occurs.

"29. The plan of organization adopted this date shall go into effect on the 15th day of October, 1875, as to all the companies represented in this convention, unless a dissent to the same be made on behalf of any such company, of which dissent notice shall be given to the president of this association, in which case the fact of such dissent shall be communicated by the president of this association to the companies parties hereto.

"30. This agreement shall continue in force until the 1st day of January, 1877."

Statement made by Mr. Albert Fink, late general commissioner of the Southern Railway and Steamship Association, on the occasion of severing his connection with that organization, April 15, 1876.

"For the first time, the exact amount and value of the business for which the associated roads compete is known, and the managers are enabled to estimate correctly the losses which they must incur by ruinous competition, and the net revenue which they may save to their stockholders by intelligent co-operation.

"It is hoped such information will lead to a more judicious management of the competitive business than has heretofore been possible.

"The following considerations will show what use may be made of this information.

"All competitive struggles have for their object to secure to each transportation line a fair share of the business, or what may be considered so by each.

"It is certain that any one line cannot expect to monopolize the whole. In the absence of all information regarding the exact amount of traffic in competition, or the portion carried by each of the competing lines, it is impossible for any one line to determine whether it has reason to be satisfied or should make additional efforts to secure more. Having no guide whatever to determine its policy in this respect it endeavors to get as much as it can, and in the general strife in which all engage for that purpose compensation for the work done is reduced to a point where the whole business is worthless to all.

"The mode in which the competitive business between transportation companies is generally transacted is well known, but must be referred to here to show how little

reason and intelligence, honesty and fairness is brought to bear upon the management of so important a property as that owned by the transportation companies.

"A number of competing lines agree upon certain rates to be charged by each, and pledge themselves to strictly maintain the same. There may be some of the managers of these lines who honestly mean to carry out the agreement, but generally there are others who make agreements with the intention to break them, and merely for the purpose of taking advantage of the more honest.

"There are other reasons not necessary to mention here which, under the present management of the transportation business, make it almost impossible to carry out the agreement in regard to maintenance of rates, even if all parties honestly intended to do so.

"The fact that these agreements are hardly ever carried out has been fully established by past experience. The managers have no longer confidence that they can ever be carried out, and there seems to be a tacit understanding that agreements to restore and maintain rates, after a period during which low rates prevailed, are, in most cases, merely made for the purpose of practicing deception upon each other, starting from a higher scale of rates in order to secure, for a short period at least, some remuneration for the work performed, until the low rates are reached again in the natural course of events.

"This mode of transacting business, based upon deception and dishonesty, has been elevated into a business principle in the management of railroad property, and is pronounced by many experienced railroad managers and general freight agents as the only possible or practicable mode upon which the competitive business can be conducted.

"It is hardly necessary here to remark that, if this be true, the proprietors of the railroads need not expect to derive much benefit from their property, especially during times when the transportation facilities of the country are so far beyond its wants, as is at present the case. I believe, however, that it is possible to conduct this business upon correct principles, and thereby save a large portion of the railroad property of the country from ruin, which seems inevitable under the present system of management.

"The first step toward that end has been taken by the transportation companies forming this association, in securing a correct knowledge of the amount and value of the business which forms the subject of contention between the members of the association.

"It is shown in Table L that during the year 1875 the gross revenue of the competitive business of the lines named in that table was, at the full rates agreed upon, $1,451,315.16.

"This amount of the competitive business may be considered as a fixed one; lower rates would not have increased it, provided the agreed rates were reasonable, and this was no doubt the case—but if not, then it would be to the interest of all parties to agree upon rates under which the largest amount could be obtained.

"Estimating the losses which would have resulted to the stockholders under the usual system of management, we have first to consider the expenses of soliciting agencies, which, under that system, are unavoidable. They are hardly ever less than 10 per cent. of the gross earnings. (See report of South Carolina Railroad for 1875: 'Foreign agencies, $26,384.45, and total through business, $234,861.25, or 11.23 per cent.'

"In the next place the rebates paid secretly, while pretending to maintain full rates, may be estimated at from 10 to 20 per cent., say an average of 15 per cent., making a total reduction of 25 per cent. of the earnings, even under the supposition that the parties pretend to maintain full rates.

"But this make-believe is hardly ever carried on for any length of time. From the very nature of the transaction low rates are soon reached, not unfrequently from 50 to 70 per cent. lower than the agreed rates. When this is done the payment of rebates generally ceases, but the expenses of soliciting agents continue.

"Estimating the reduction of rates only at 50 per cent., and adding 10 per cent. for soliciting expenses, the loss of revenue during the period of low rates is 60 per cent., and during the whole period forming a cycle in the history of railroad management—that is, between the time of making two agreements for the restoration of rates—the actual gross earnings will be as follows: During first period, 100 — 25 = 75 per cent.; during second period, 100 — 60 = 40 per cent., and average earnings, one-half of 115 per cent., or 57½ per cent., or 42½ per cent. less than the gross earnings would have been had the agreed rates been fully maintained, and the necessity of soliciting agencies avoided. This 42½ per cent. is in many cases equal to the whole net earnings that could be derived from the competitive business, showing that this portion of their business is really valueless.

"According to Table L, the gross earnings at agreed rates of the lines named in that table during one year were $1,451,315.16, consequently the total loss in net revenue would be $616,808.94, (it must be remembered that the loss in net earnings is equal to the reduction in gross,) which loss is borne by the several companies proportionately to their gross earnings. The gross earnings reported here did not include the earning

of the lines which are not members of the association, but work with the same under agreed rates, nor does it include the gross earnings to and from points where there is no direct competition, but the rates at which points (and consequently the revenue) are affected by the competitive rates.

"It is fair to estimate that the gross earnings from the competitive business, (and consequently the estimated losses,) under the system of underbidding, are 50 per cent. more than here stated.

"The competitive business of the southern transportation lines named in Table L forms only a very small proportion of the business which is transacted under the system of management to which I have referred, and which prevails more or less all over the country.

"An opinion may be formed of the immense losses which result from it to the proprietors of transportation lines throughout the whole country, and less surprise will be manifested when we notice the general depreciation of railroad property, and the great number of railroads in the hands of receivers, unable to pay even interest on their mortgage debt.

"The estimate of the average loss of 42½ per cent. on the competitive business is made on the basis fully explained above. I think the estimate is rather low, but those who are better informed can readily substitute their own figures in each particular case. It will be readily conceded that in no case under that system is this average less than 30 per cent. of the revenue that would be received if agreed rates were strictly maintained.

"Now, bearing in mind that the sole object which each competitor has in view in thus sacrificing so large a proportion of its net earnings is to secure a reasonable proportion of the business, it follows that if that object could be attained while the agreed rates are fully maintained, a large increase in the net earnings of all the competing lines would be the result.

"Under agreements to maintain rates, even if they were honestly carried out, a satisfactory distribution of the competitive business (except it were by mere accident) cannot be expected.

"It is impossible to predetermine the proportion of business that each line would receive under an observance of equal rates. Some inferior lines might not receive any, others a very small, and again others a very large proportion; perhaps one or the other might receive it all. A distribution of the competitive business, left to chance or to the natural or made advantages possessed by the several competing lines, will always be found to be unsatisfactory to one or the other, and lead to a violation of the agreement and to low rates.

"We cannot expect an inferior line to maintain equal rates merely in obedience to an abstract principle, when it cannot secure any business. To overcome this difficulty it has been the practice among competing lines to agree upon certain lower rates to be charged by the inferior lines. But it is found difficult to agree upon such differences. They may not be made large enough to bring about the desired results, in which case the agreement will not be satisfactory to the inferior lines, or they may be made too great, in which the stronger lines are not likely to adhere to them. In the absence of a knowledge of the exact amount of business received by each—and under such agreements accounts are never kept—the decision is left to the judgment of the interested parties, and the conclusion is soon arrived at by one or more, or all, that they do not receive as much as they want. Expensive wars, involving millions of dollars of revenue, are waged to determine the exact difference in rates to be observed by competing lines to bring about an indefinite result in the division of business. I say indefinite, because none of the parties know exactly what portion of the business they could reasonably claim, much less do they know what they are actually receiving. In this crude way, all parties ignorant of the essential facts bearing upon the subject, important questions in the management of the great railroad property of the country are to be determined by its managers.

"When we consider that the simple question at issue is to bring about a reasonable and fair distribution of the competitive business at remunerative rates, the only rational mode of solving this question that can be suggested, is for the interested parties *to agree first definitely upon a division; to ascertain definitely, by a proper account-keeping, whether this division takes place under the adjustment of rates agreed upon, and if not to re-adjust the rates from time to time, so as to insure the desired result. When this is done, all motive for strife and ruinous competition is removed.*

"It will be asked, Is it possible or practicable to agree upon a fair or proper division of business? We know that it is possible to agree upon rates; not only possible, but absolutely necessary, if the competitive business is to be conducted at all with advantage to the transportation companies. Instead of agreeing upon the means to bring about a desired result, viz, a fair division of business, it ought certainly to be as practicable to agree upon the result first and then upon the means. This would not change the principle upon which competing lines now attempt to transact the competitive business, but merely the method, substituting a positive method for one which from its very nature cannot be expected to accomplish the end in view.

"The question of making a fair and equitable distribution of business between competitive lines is not so difficult to determine as it may appear at first sight. It can be easily solved by applying to its solution the proper analysis of the facts that bear upon it.

"Bearing in mind that it is not the largest amount of tonnage, but the largest amount of net revenue that each competitor wants to secure, it can be readily shown that even under the most unfair division that could likely be made, the net revenue of the competitor least favored in such a division would be greater than under the distribution if it is left to chance and subject to the usual process of underbidding and deception.

"A few general principles that will be acknowledged as correct will serve as a guide for a fair division of business.

"These are:

"First. No one of the competitors can claim to monopolize the whole business, and no one can be excluded from some portion of it.

"Second. Lines of equal strength are entitled to receive an equal proportion.

"Third. Inferior lines—and as such are characterized those that could not receive equal proportions of business with other lines at equal rates—should be satisfied with a smaller proportion than the stronger lines.

"To illustrate the method in which these principles may be practically applied, I will assume that at a certain place four lines are competing for the same business. If they are of equal strength, each would receive 25 per cent. Supposing, however, that two of the lines possessed greater advantages to such a degree that, at equal rates, they could secure nearly all of the business, but acknowledging the fact that the weaker lines must have a portion of it, they would be willing to allow at least 10 per cent. to each. This would leave 80 per cent. to be divided equally between the two stronger lines, or 40 per cent. to each.

"The most unreasonable demands that the inferior lines could make would be to share equally or claim 25 per cent. The difference in this case between the maximum demanded and the minimum conceded would be 15 per cent. of the business. Estimating the actual cost of transportation at 40 per cent., the net revenue involved in the contest would be $15 \times \frac{6.0}{100}$, or a sum equal to 9 per cent. of the gross revenue. I have shown that under the present system of management the losses in net revenue may be estimated at 42½ per cent. of the gross revenue, but estimating the same only at 30 per cent., there would be a gain in net revenue to the stronger lines, even under a division that must be considered as unjust, of a sum equal to 21 per cent. of the gross revenue.

"The question, therefore, which of the two plans of operation is the best, cannot be of doubtful solution.

"In the application of the method here explained to the various cases as they occur in practice, it will be found that the extreme *reasonable claims* of competitive lines will hardly ever overreach the limit of 15 per cent. of business, or a net revenue equal to 9 per cent. of the gross revenue. It is, of course, not advocated that any one line should submit to injustice, nor is it expected that a fair division could be made in all cases by the interested parties themselves. But the division may be made by an impartial umpire. It would have to be palpably unjust and erroneous if it were to result in greater losses to any of the parties than are inevitable in case of open competition.

"The objection that may be urged by some lines to the plan of agreeing upon or submitting to an equitable division of business by arbitration arises generally from the belief of its managers that they possess superior faculties or smartness in deceiving their competitors, and that thereby they may secure more than what might be considered by impartial judges their fair proportion.

"A little reflection and consideration of the limits within which deception may possibly be practiced upon others will show that this theory is one of self-deception, and merely leads to decreased revenue, as compared with the results that are surely to be obtained under the proposed plan.

"Under the most favorable circumstances, viz, during the time that the parties who act upon this theory are believed to act honestly, while they are paying rebates and others do not, the cost of purchasing business can hardly be less than 15 per cent. of the gross revenue.

"The amount of business required to secure net earnings equal to 15 per cent. of the gross earnings (the operating expense being 40 per cent.) would be 25 per cent. Bringing into consideration also the soliciting expense, which can be dispensed with under the proposed plan, the amount of additional business which must be secured to pay from its net revenue these expenses and the rebates—25 per cent.—would be 42 per cent.

"Now, it is not reasonable to suppose that any line could secure, especially when there are more than two, so large a proportion over and above what would be considered its share by a fair division, without being suspected, discovered, and at last followed by the others.

"It is well known that the general instructions which are given to soliciting agents,

to do as others are doing or supposed to be doing, are carried out with great alacrity by these agents, as their importance and occupation depend upon such contingencies.

"Under these instructions the management of the competitive business is practically turned over to these agents, and the proprietors of the roads or its managers lose all control over it, and become mere figure-heads, as far as this important branch of the business is concerned, upon which, to a great degree, the financial success depends.

"Under the management of the soliciting agents it is not long before unremunerative rates are reached, and estimating, as I have done, the losses in net revenue incurred thereby to all competitors equal to from 30 to 42½ per cent. of gross revenue, that would have been received had rates been maintained, the amount of additional business required by any one line to make up these losses is from 50 to 70 per cent.

"It is self-evident that it is impossible to secure such a large increase over a fair proportion to any of the competing lines by the most skillful maneuvering and by the greatest art in deception.

"It follows, therefore, no matter what view may be taken of the subject, that a fair and impartial division of business by which the maintenance of remunerative rates are secured will result to all competitors in the largest possible amount of net revenue.

"The sooner this fact is understood the sooner will the present disgraceful management of the competitive business be abandoned, and the sooner will the proprietors of the railroads receive a just compensation for the use of their property. While the proposition which I have endeavored to demonstrate mathematically may appear to many self-evident, yet if it were not for the hope that seems to linger in the minds of some railroad managers and general freight agents, that they could secure to their employers advantages over competitors and thereby increase their net earnings—a hope so illusive—the competitive business would have been before now conducted upon more correct principles and with better results to all parties.

"Since the association was formed the method of conducting the competitive business here recommended has been adopted and successfully carried out at several of the competing points. Accurate accounts were kept of the business transacted by each line, and from time to time directions were given through this office to lines that fell short to lower their rates, and to others that exceeded their proportion to maintain full rates, or to increase the same until the proper division had taken place. Where these directions were observed no difficulty has been experienced, and the fact has been fully demonstrated that the plan is entirely practicable. I regret to report that at some places all the lines did not obey the directions, in consequence of which the agreed division has not yet been brought about.

"In all cases where the competition is confined to one place, from which the shipments are made, and this is the case in the East-bound business, there can be no difficulty in carrying out the plan. But when shipments are made from a number of places directed to any one place, as is the case with the South-bound business, it is more difficult to secure the agreed division by adjustment of rates, and it becomes then necessary to ascertain the net revenue that each line would have received had the proper division taken place, and guarantee to each line that revenue by the payment of the balances that may arise in cash. This plan was adopted in March last in regard to the merchandise business, and should be adopted in all cases where a proper division in kind may not be practicable, convenient, or desirable.

"The clearing-house is now fully organized, and accounts can be rendered and balances settled on the 15th of each month for the business of the preceding month. I respectfully recommend this plan for general adoption by all the roads of the association and those that are working with them as the only one under which the property represented in the association can be made to yield the largest profit. I am satisfied, from past experience, that under no other plan can remunerative rates be maintained.

"In the division of business as well as all other transactions relating to the competitive business, a number of questions come up that have to be carefully considered and impartially decided. The reports published for the year 1875, showing the amount and value of the transportation business at each place, will now greatly aid in making an equitable division. The organization of this association furnishes the means by and prescribes the method in which all questions of conflict, no matter what may be their nature, can be justly and equitably decided, surely in a much more satisfactory manner than this could possibly be done by the usual mode of warfare, and the consequent reduction of the revenue to all parties. If the members of the association will sustain its authority, comply with its rules, and adopt the plan of dividing the competitive business as here proposed and carry it out in good faith, they will secure, without a doubt, the largest possible net revenue to each company.

"Objections have been made to the system of operations here recommended. It is said that the co-operation of competing transportation lines and consolidation of their interests is against public policy. Whether this be so or not, depends altogether upon the object and result of such co-operation. If it resulted in unreasonable transportation charges and extortion, such combinations should, indeed, not be tolerated; but if their object be to secure to the railroad companies reasonable compensation for their

services, and to the public reasonable and permanent rates of transportation, then such combinations cannot be considered against public interest.

"It can be readily shown that the great evils of the transportation business arise chiefly from the strife and warfare between the transportation companies. This strife and warfare—generally called competition—possesses none of the legitimate elements of competition, but simply results from the want of proper management of an extremely intricate and complicated business, or from direct and gross mismanagement.

"When railroad managers of competing lines establish certain competitive rates, and agree to maintain them, all the legitimate elements of competition are previously considered, and have had their full influence upon the tariff.

"The cheap rates of water transportation exert their influence in reducing the rail rates from the northern lakes southward, from the Gulf of Mexico northward, from the Atlantic seaboard westward, and the Mississippi River eastward, until it is felt at the most interior points within the territory embraced between these waters.

"The rivalry between commercial communities, each served by a separate system of railroads, exert their influence upon the tariffs. The railroads whose interests are identical with the localities upon which they depend for business must adjust their rates so as to secure for them the full advantage of their position.

"Enlightened self-interest requires that the tariffs shall be so regulated as to obtain, under their operations, the largest possible amount of business and revenue. All these elements enter necessarily into the formation of the tariffs. When they are once established, according to correct principles, and pledges are given to maintain them, the reductions which are subsequently made, through the desire of each competitor to obtain the largest share of the business by a process of underbidding, openly or secretly, and by the payment of rebates or other means of deception, are not the result of legitimate competition. They are generally made in violation of the laws that should govern common carriers, and regardless of the cost of the service—they depending upon the degree of good or bad faith that may be practiced by the competitors. They result in favoritism, unjust discriminations, unreasonably low competitive rates, unreasonably high local rates, constant fluctuation in rates, and consequent changes in the value of articles of commerce, and cause disturbance of all commercial relations.

"In addition to these evils under which the public suffers, the proprietors of the roads are deprived of their just compensation for services rendered. Railroad property, in which so much capital is invested by the people of this country, depreciates, or its value is entirely destroyed, and this again re-acts injuriously upon other industries, upon the credit, and upon the general prosperity of the country.

"Can it be against public policy to adopt the only practical means by which these evils can be remedied?

"To establish, regulate, and maintain, with some degree of permanency, the transportation tariff of this country, with its 70,000 miles of railroads and its many navigable rivers, is not a problem that can be solved satisfactorily in the interest of the people and in the interests of the proprietors of the roads by the disjointed and separate action of the individual carriers and by strife and warfare with each other. Combination and organization are absolutely necessary.

"It is the object of this associatian to secure intelligent co-operation and to remedy the great defects in the present system of management.

"In severing my connection with the association after the first six months of its existence, I beg to express the hope that it will be maintained and protected under the wise management of its members.

"All of which is respectfully submitted.

"ALBERT FINK,
"*General Commissioner.*"

Question 10. Please furnish statements of the quantity of the following articles of western produce shipped during 1875 into the Southern States east of the Mississippi River, as far as you may be able to do so—flour, bacon, lard, wheat, cord, oats, hay, whisky, potatoes, apples, horses, mules, cattle, rope, and bagging. Also state where may be obtained statistics bearing upon this subject, which you may not be able to furnish yourself.

Answer. The following table contains all information regarding the quantities of western produce shipped into the Southern States which I can obtain:

TABLE A.

	Flour, barrels.	Bacon and lard, pounds.	Wheat, bushels.	Corn, bushels.	Oats, barley, rye, bushels.	Hay, tons.	Whisky, barrels.	Horses and mules.	Cattle and sheep.	Potatoes, apples, and onions, barrels.	Rope and bagging, pounds.
A	306, 129	55, 051, 366	401, 970	1, 487, 123	418, 444	3, 000	21, 057	10, 200	3, 400	13, 880	1, 547, 420
B	1, 624	2, 778, 470	6, 830	13, 928	1, 045	200	632	272	.....	1, 199	.....
C	12, 080	1, 352, 000	3, 758	8, 427	4, 540	150	2, 100	867	1, 088	.....	715, 335
D	142, 952	29, 734, 000	117, 989	506, 862	103, 726	584	19, 772	2, 958	.....	.....	1, 900, 120
E	462, 785	88, 915, 836	530, 547	2, 016, 340	527, 755	3, 934	43, 561	14, 297	4, 488	(*)	(*)
F	142, 952	60, 000, 000	117, 989	506, 862	103, 756	450	10, 000	.....	.....	(*)	(*)
G	605, 737	148, 915, 836	648, 536	2, 523, 202	631, 481	4, 384	53, 561	14, 297	4, 488	(*)	(*)
H	120, 060	34, 520, 052	12, 501	266, 792	266, 175	2, 944	4, 000	11, 256	1, 304	.....	.....
I	36, 798	2, 714, 540	.....	11, 911	202, 404	176	1, 216	98	54	.....	.....
K	67, 598	35, 913, 500	21, 860	105, 168	28, 064	616	36, 951	2, 550	5, 542	.....	3, 618, 162
L	630, 193	222, 063, 928	682, 897	2, 907, 073	1, 128, 124	8, 120	95, 728	28, 201	11, 388	(*)	(*)
M	20, 987	5, 898, 180	.....	58, 691	21, 588	731	.....	.....	.....	5, 823	.....
N	13, 913	643, 900	206, 758	337, 321	41, 350	731	104	272	2, 431	3, 095	.....

(*) Not complete.

The articles shown in lines marked A and B pass through Chattanooga and over the line of the Western and Atlantic Railroad.

The articles in line A reach Atlanta, Ga., and are distributed from there to all points south and east, and those in line B reach Dalton and are distributed by the Selma, Rome and Dalton Railroad along the line of that road.

The articles in line C arrive at Decatur, via Nashville, and are distributed along the line of the Memphis and Charleston Railroad.

The articles named in line D pass through Decatur to points South, principally to Selma and Montgomery and beyond.

Line E shows the total quantities of western produce reaching the South via the transportation routes from No. 1 to No. 10, first and second classes named in answer to question 1.

In these quantities are included, however, the products of the States of Kentucky and Tennessee, which are shipped to points south of Chattanooga and Decatur, but not the western produce shipped from points north of the Ohio River to points in those States north of Chattanooga and Decatur. No estimate can be obtained of the latter.

It may be assumed that the products of the States of Kentucky and Tennessee shipped south of Chattanooga and Decatur do not exceed those imported into those States from the West.

No full statement can be obtained for a whole year of the quantities shipped by the routes Nos. 11 to 15, third and fourth classes named in answer to question 1, but from statements covering seven months the quantities shipped via these routes to Selma and Montgomery and to points East may be estimated, as shown in line F, so that the total amount of Western produce shipped via the routes named, from 1 to 14, to the interior of the Southern States via rail to Selma, Montgomery, and points south of Decatur and east of Chattanooga, may be estimated, as shown in line G.

Only a partial estimate can be made of the quantities shipped via the routes Nos. 15 to 22, named in the fifth class of routes in answer to question 1. Regarding route No. 15, via Alabama River, no data can be obtained, except that freight delivered to these steamers by the New Orleans and Mobile Railroad in 1875 was 1,739 tons.

Line H shows the quantities brought by the Illinois Central Railroad to Cairo and shipped via rail over Mobile and Ohio Railroad (route No. 16) and via New Orleans, Saint Louis and Chicago Railroad, (route No. 17.) It does not, however, include articles brought to these two roads by the river.

Line J shows the quantities delivered by Illinois Central Railroad at Cairo and forwarded from there South by river.

Line K shows the quantities shipped via the Louisville route (18, 19, and 20) into the States bordering on the Mississippi River.

The quantities shipped by route 21 cannot be ascertained; they are, however, very small.

To complete the estimate of freight shipped by western routes to the South, the articles transported by steamers on Ohio and Mississippi Rivers to all landings on these rivers should be added, but I have no means to ascertain the same. Shipments made to these points and from there to the interior by rail under through bills of lading are, however, included in line G.

All shipments via western routes, with the exceptions named, are summed up in line L of Table A.

The quantities of western produce shipped via the eastern and southern trunk lines named in class 6, routes 23 to 37, (see answer to question I,) cannot be ascertained. The total of that portion, however, which is sent by rail to the interior under through bills of lading from Baltimore, Philadelphia, and New York does not exceed ten thousand tons.

The quantities delivered to the seaboard cities, consumed at those cities or sold in their local trade, are not known to me.

The Atlantic and Gulf Railroad Company is the only one which reports that class of business, and the quantities carried by that road from Savannah are shown in line M.

East Tennessee furnishes to the Southern States a portion of provisions. The quantities which from that State are transported from Dalton via the Western and Atlantic Railroad are shown in line N of Table A. It is proper to state that the shipments of grain and bacon into the South were less in 1875 than in the previous year.

The Nashville, Chattanooga and Saint Louis Railway Company reports a reduction of 552,830 bushels of corn and 24,060,735 pounds of bacon, or 20 per cent. and 30 per cent. less, respectively, than in the previous year. This reduction is no doubt due to the fact that more grain and provision is now produced in the Southern States, and it is expected that hereafter this will be the case to a still greater extent.

Question 11. Please make an estimate of the number of tons of freight of all classes shipped to the South from points north of the Ohio River, including Louisville, by all lines of transportation, as far as you can ascertain.

Answer. The following is a statement of the number of tons of freight shipped to Nashville and points South via the transportation lines named below:

Via Louisville and Nashville Railroad.

	Tons.
From Louisville and points north to Nashville	26,406
From Louisville and points north to Chattanooga and south	78,973
From Louisville and points north to Decatur and south	52,144
Total from Louisville and points north to Nashville and points south	157,523
From Nashville—freight brought there by other transportation lines and shipped south via Nashville and Decatur Railroad	25,868
Total via Louisville and Nashville Railroad to Nashville and points south	183,391

Via Nashville and Northwestern Railroad.

From points north of Ohio River to Nashville	28,924	
From points north of Ohio River to Chattanooga and south	63,403	
		92,327
Total to Nashville and to Chattanooga and points south, and to Decatur and points south		275,718
Of this tonnage there comes from eastern seaboard cities, via Louisville and Nashville Railroad, to Nashville		7,043
The remainder originates in Western States—total		268,675
Of the above freights shipped south of Chattanooga—		
The number of tons arriving at Atlanta is		147,048
The number of tons arriving at Montgomery and Selma is		71,606
Total to points south of Chattanooga and Decatur		218,654
Which comprises the total over routes from Nos. 1 to 10 (see answer to question 1) for points named.		
The number of tons shipped via routes 11 to 14 to Selma and Montgomery and to points east are estimated at		71,000
Total tonnage via routes 1 to 14 to points south of Chattanooga and south of Decatur, and east of Selma		289,654
And including Nashville and points between Nashville and Chattanooga and Nashville and Decatur	268,675	
	71,000	
		339,675

To this has to be added the number of tons shipped over the routes from 15 to 22.

The number of tons shipped via route 15 was	1,739
Via routes 16 and 17, as shown in report of Illinois Central Railroad of freight delivered at Cairo to these roads, 226,248 tons, of which 34,844 tons were shipped via Nashville and have already been accounted for, leaving	191,404
Via routes 18, 19, and 20, from Louisville, were shipped 80,227 tons, of which 10,697 tons were shipped from the East, leaving of western freight	69,530
Total tons shipped over routes 15 to 20	262,673

The quantities shipped by route 21 are inconsiderable; those by route 22 (by river) cannot be ascertained. The total number of tons shipped via routes 1 to 14 to Nashville and points south, as shown above	339,675
Via routes 15 to 20	262,673
Total shipments by western routes named	602,348

For the purpose of forming a better conception of these quantities, I will express the same in the measure of car-loads of 10 tons shipped per day, as follows:

	Car-loads per day.
To and via Nashville, Selma, and Montgomery, and points south and east, via routes from 1 to 14	93
From Louisville and Cairo south to States bordering on Mississippi via routes 15 to 20	72
Total	165

Which comprises very nearly the total movement of western freight in the interior of the Gulf States via rail, *not including the shipments made via Mississippi and Ohio Rivers to river points.* To this should be added about *three car-loads per day* shipped direct under through bills of lading via the eastern and southern trunk lines in the interior of the Atlantic States south of North Carolina, not including shipments made to the seaboard cities, and distributed from there by the local trade of these cities. Total movement by rail in the interior of the Southern States east of Mississippi River, 168 *car-loads per day.*

Question 12. Please state the transportation charges made per ton per mile for all classes of western freight shipped south via Louisville and Nashville Railroad, and the revenue per mile of road derived from it in 1875, so far as this can be ascertained.

Answer. The average revenue derived from the 157,523 tons shipped from Louisville to Nashville and points south, as stated in answer to previous question, was 1.87 cents per ton per mile, and from the 80,227 tons shipped, 18, 19, and 20, 15 cents per ton per mile.

The revenue per mile of road from the former was	$2,960
The revenue per mile of road from the latter was	1,207
Total revenue on part of road between Louisville and Memphis Junction, on which this tonnage is concentrated	4,167

At Nashville the 157,523 tons are divided between the Chattanooga route and the Montgomery route, and there is added the freight brought by the other lines from the West centering in Nashville, as shown in statement furnished in answer to previous question.

The revenue derived from the 147,048 tons of western freight arriving at Atlanta is, per mile of road	$3,100
Add the revenue derived from the 71,606 tons south of Decatur to Montgomery, &c., is, per mile of road	1,150
Total revenue derived from western freight by all routes, for points south of Chattanooga and Decatur, supposing the tonnage concentrated upon one road.	4,250
And including revenue from tonnage by routes 11 to 14, estimated per mile of road	1,150
Total revenue per mile, of all routes together named from 1 to 14, from western produce reaching points south of Chattanooga and Decatur and east of Selma.	5,400
The revenue per mile on shipments made south from Cairo, (191,404 tons,) may be estimated at	2,467
Making total revenue per mile of road from western freight moved in the interior of Southern States during the year 1875, via western routes, supposing it to be concentrated upon one road	7,867

Question 13. Please state the number of tons of freight shipped north over the Louisville and Nashville Railroad coming from Nashville and points south of Nashville and from Memphis and points south, also the revenue derived therefrom, per ton per mile, and per mile of road. Also the proportion of north to south bound freight on southern roads as far as this can be ascertained.

	Tons.
Answer. The north-bound business from Nashville to Louisville in 1875 was.	17,832
From Decatur and points south to Louisville	22,190
From other points south of Nashville to Louisville	33,388
Total	73,410
Revenue derived per ton per mile 1.23 cents, and per mile of road, $901.	
The north-bound tonnage from Memphis line was	67,988
Revenue per ton per mile 1.08 cents, and per mile of road $739.	
Total north-bound tonnage arriving in Louisville from the South	141,398

Total revenue from north-bound through business per mile of road, $1,640.

Total revenue from south and north bound through business per mile of road between Memphis Junction to Louisville, $6,040.

The percentage of north-bound tonnage is 60 per cent. of the south-bound.

Of the 141,398 tons north-bound tonnage, 50,000 tons were derived from cotton.

The north-bound tonnage on Illinois Central Railroad from Cairo, 65,605 tons, being about 30 per cent. of south-bound.

The north-bound through shipments over Nashville and Chattanooga Railroad from Chattanooga to Nashville were 46,918 tons, being 26 per cent. of south-bound.

The north-bound shipments over Western and Atlantic Railroad from Atlanta to Chattanooga were 7,048 tons; Dalton to Chattanooga, (mostly pig-iron,) 7,820 tons; total, 14,868 tons, being about 10 per cent. of south-bound shipments.

Question 14. For every hundred loaded cars hauled south how many loaded cars are hauled north over the Louisville and Nashville Railroad?

Answer. The mileage made by loaded cars south on main stem of Louisville and Nashville Railroad in 1874–'75 was	5,124,803
Loaded cars north	4,263,469
On Nashville and Decatur Railroad, loaded south	1,279,671
On Nashville and Decatur Railroad, loaded north	947,259
Memphis and Clarksville Railroad, (Clarksville division,) loaded south	1,354,427
Memphis and Clarksville Railroad, (Clarksville division,) loaded north	1,070,952
Memphis and Ohio Railroad, (Memphis division,) loaded south	1,029,281
Memphis and Ohio Railroad, (Memphis division,) loaded north	698,544

The relation of north to south bound business is shown in answer to question 5.

Question 15. Please to present statistics of tonnage moved during the last ten years on roads connecting the Western and Northwestern States with the South Atlantic and Gulf States, the object being to obtain expressions of the growth of North and South commerce.

It will be very difficult, perhaps impossible, to procure data as to the total movements, therefore the statistics of movements of one or two trunk lines may be taken alone.

Do you think the increase of business on the Louisville and Nashville Railroad and the road connecting Chattanooga and Atlanta may be assumed to be characteristic of the total movements?

Answer. The following statistics bear upon the subject of this inquiry:

1st. Statement B shows the number of tons of freight carried over the Louisville and Nashville Railroad between Louisville and Nashville and points south for nine years, and to Memphis and other points south and east of the Mississippi River during six years, ending July 1, 1875.

STATEMENT B.—*Showing the number of tons of freight shipped over Louisville and Nashvill, Railroad to Nashville and to Memphis, and to points southeast of the Mississippi River during the nine years from July 1, 1866, to June 30, 1875.*

Years.	South-bound.				North-bound.			
	To Nashville.	Rate per ton.	To Memphis Junction.	Rate per ton.	From Nashville.	Rate per ton.	From Memphis Junction.	Rate per ton.
	Tons.	*Per mile.*	*Tons.*	*Per mile.*	*Tons.*	*Per mile.*	*Tons.*	*Per mile.*
1866–'67	40,000	.....	.....	.....	.....	.....	.....	.....
1867–'68	64,832	3.865	.....	.....	39,235	2.652	.....	.....
1868–'69	69,280	3.359	.....	.....	27,778	2.641	.....	.....
1869–'70	92,401	3.149	63,395	2.512	25,465	1.882	44,983	1.460
1870–'71	112,550	2.543	91,670	1.998	41,823	1.672	74,635	1.392
1871–'72	161,997	2.224	121,343	1.859	41,531	1.400	75,704	1.292
1872–'73	168,573	2.374	105,870	1.896	71,591	1.429	81,512	1.357
1873–'74	158,745	2.158	86,310	1.702	75,257	1.430	78,012	1.227
1874–'75	157,520	1.908	80,227	1.433	73,410	1.220	69,988	0.991

The great increase in tonnage between the years 1866 and 1871 is partially due to diversion of tonnage from the river to the railroads.

In 1869, the Green Line was established by a number of railroad companies, which agreed to exchange cars with each other, and the change of bulk at junction points and great delays consequent thereto. Up to 1869 and 1870 a considerable portion of the freight afterward concentrated upon the Louisville and Nashville Railroad was carried to Nashville via the Cumberland River, or via the Tennessee River to Johnsonville, (routes 5 and 6, see answer to question 1.) While some freight is still carried via these routes, the quantity has been greatly diminished, and none is carried in direct competition with the Louisville and Nashville Railroad from Louisville or Cincinnati.

Statement B also shows the revenue per ton per mile derived from the competitive business to Nashville and Memphis and points south. It will be seen that from the south-bound Nashville business there has been a reduction of one-half since 1868, and nearly that much on the south-bound Memphis business.

The lower rates received from the Memphis business, as compared with the Nashville business, are due to the more active river competition between Cincinnati, Louisville, Saint Louis, and Memphis.

Statement B gives the same information in regard to tonnage over the Louisville and Nashville Railroad between Louisville and Nashville, but shows in addition the principal points from which the freight was shipped, and its destination to Nashville, or to points south of Nashville.

STATEMENT C.—*Showing number of tons of freight shipped over the Louisville and Nashville Railroad from points named below to Nashville and beyond, during the nine years from July, 1866, to June, 1875.*

Years.	From Louisville.		From Cincinnati.		From eastern and seaboard cities.		From other points north of river.		Total.
	Nashville.	South of Nashville.	Nashville.	South of Nashville.	Nashville.	South of Nashville.	Nashville.	South of Nashville.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1866–'67	.....	.....	.....	.....	.....	.....	.....	.....	40,000
1867–'68	13,162	33,108	3,451	6,740	6,569	112	1,244	.....	64,832
1868–'69	13,983	36,059	3,698	8,582	4,825	55	1,172	.....	69,380
1869–'70	10,209	50,456	4,113	15,282	4,893	501	2,074	.....	92,401
1870–'71	10,205	50,378	5,750	23,501	5,580	1,501	3,936	.....	112,550
1871–'72	13,946	63,093	7,158	33,494	5,012	993	4,877	.....	161,997
1872–'73	12,762	78,360	8,347	31,311	6,775	464	5,152	.....	168,573
1873–'74	11,005	57,074	7,689	28,249	6,773	600	4,307	.....	158,745
1874–'75	7,966	47,113	6,847	29,170	6,089	954	5,503	.....	157,520

It will be seen from this statement that the great increase in tonnage took place from Louisville and Cincinnati to points south of Nashville and also from points north of the Ohio River to Louisville, to Nashville, and points south of Nashville. This

is the effect of improved railroad facilities. Shipments were made under through bills of lading in through cars.

The following table shows the revenue derived by the various roads in the Green Line during seven years; (the tonnage cannot be ascertained.)

TABLE D.—*Statement showing the revenue derived from Green Line south-bound freights upon all the Green Line roads and upon the Nashville and Chattanooga Railroad during period commencing March, 1869, to February 29, 1876.*

Date.	South-bound revenue of all the roads.	South-bound revenue of Nashville and Chattanooga Railroad.
March, 1869, to February 28, 1870	$912,530 49	$250,239 63
March, 1870, to February 28, 1871	1,447,314 11	407,335 49
March, 1871, to February 28, 1872	2,242,543 34	512,963 70
March, 1872, to February 28, 1873	2,616,832 13	604,533 71
March, 1873, to February 28, 1874	2,088,873 74	455,310 72
March, 1874, to February 28, 1875	1,722,268 53	390,725 48
March, 1875, to February 29, 1876	1,381,310 76	305,811 72
Total, (March, 1869, to February 29, 1876, 7 years)	12,411,673 10	2,926,920 65

The same statement also shows the revenue of the Nashville and Chattanooga Railroad during the same period of time derived from the western business.

This table may be used as an indication of the growth of the western business up to the time when the South and North Alabama Railroad was completed, (October, 1872.)

Since that time part of the western freight has been diverted from the Green Line and Nashville and Chattanooga Railroad.

Estimating the revenue so diverted, as per reports of the Louisville and Nashville Railroad, and adding it to the revenue shown in statement from the year 1873, the following table shows the revenue from western business passing through Nashville during the years named:

Years ending—	Revenue of all Green Line roads, including Nashville and Decatur and South and North Alabama Railroads.	Revenue of Nashville and Chattanooga, Nashville and Decatur, and South and North Alabama Railroads.
February 28, 1870	912,530	250,239
February 28, 1871	1,447,314	407,335
February 28, 1872	2,242,543	512,963
February 28, 1873	2,716,832	680,000
February 28, 1874	2,456,000	605,000
February 28, 1875	2,100,000	570,000
February 28, 1876	1,625,000	425,000

In drawing conclusions from the information contained in this statement regarding the amount of tonnage, the reduction in the rates per ton per mile as shown in Table A must be considered.

I consider that the tonnage over the Louisville and Nashville Railroad, as reported in Table B, is the best indication of the changes that have taken place since 1870.

From the three statements submitted it appears that there was a great increase in tonnage and revenue from 1870 to 1873, and since that time a reduction. The following are the names of the railroads constituting the Green Line and the length of these roads:

Names.	Miles long.
Louisville and Nashville	185
Nashville and Chattanooga	151
Western and Atlantic	138
Nashville and Northwestern	170

Names.	Miles long.
Macon and Western, (Central Railroad of Georgia)	103
Georgia	171
Atlanta and West Point	87
Selma, Rome and Dalton	236
Charlotte, Columbia and Augusta	195
Macon and Brunswick	186
Atlanta and Gulf	238
Saint Louis and Iron Mountain	195
South Carolina	138
Southwestern	143
Saint Louis and Southeastern	146
Wilmington, Columbia and Augusta	189
Central	192
Port Royal	112
Savannah and Charleston	107
Atlanta and Richmond line	266
Total miles	3,348

Question 16. Please furnish a statement as to the various fast-freight lines operated between Western and Southern States.

Answer. There are no fast-freight lines in the South. A number of roads have made agreements with each other to exchange freight-cars, and a name is given to the routes over which these cars are being run south, as Green Line, or Great Southern Dispatch, or Great Southern Freight, via Charleston, or via Savannah, and so on. No organizations of fast-freight lines, separate from the management of each road, exists. The business between the various roads is conducted in the manner usual to connecting roads exchanging traffic with each other.

Question 17. Please to state the various points where the 4-foot 8½-inch gauge of the northern roads meets the 5-foot gauge of the southern roads. Is there not a tendency to change the 5-foot gauge to the 4-foot 8½-inch gauge?

Answer. All the railroads in the States south of the Ohio and Potomac Rivers and east of the Mississippi River have the 5-foot gauge, except the following roads, which have the 4-foot 8½-inch gauge: The Louisville, Cincinnati and Lexington Railroad, between Cincinnati and Louisville; the Chesapeake and Ohio Railroad, between Huntington and Richmond, Va.; the Washington City, Virginia Midland and Great Southern Railroad, between Alexandria and Lynchburgh and Danville, Va.; the Alexandria and Washington and Alexandria and Fredericksburgh Railroad, between Washington, Alexandria, and Quantico, Va.; the Richmond, Fredericksburgh and Potomac Railroad, between Quantico and Richmond, Petersburgh and Weldon; the Seaboard and Roanoke Railroad, from Portsmouth, Va., to Weldon, N. C.; the Wilmington and Weldon Railroad, from Weldon to Wilmington, N. C. I do not think that the 5-foot gauge in the Southern States will be changed to the 4-foot 8½-inch gauge. The facility and cheapness with which the trucks of cars are now being changed, preventing the change of bulk and change of passengers, does away in a great measure with the necessity of a change of gauge. Passenger-cars are being transferred from the narrow to the broad gauge and *vice versa* in 10 minutes.

Question 18. Are the railroads of Kentucky, Tennessee, and the Gulf States exempt from State regulations as to rates and fares; and to what extent have these States in granting charters to railroad companies reserved the right to regulate rates and fares?

Answer. The charters of railroads in Southern States generally prescribe the maximum charges per ton per mile, or per passenger per mile. These maximum charges vary from 7 to 10.2 cents per ton per mile, and from 4 to 5 cents per passenger per mile. No special laws have been passed in the Southern States to regulate rates of transportation.

Question 19. Upon what terms are cars generally allowed by railroads in the Southern States to run over the roads of companies other than those to which they belong?

Answer. The charge for the use of freight-cars is generally 1¼ cents per mile run.

Question 20. Please to mention the principal markets in the Southern States, east of the Mississippi, for grain and provisions shipped from the Western States.

Answer. Mississippi, Louisiana, Georgia, South Carolina, Alabama, Florida.

Question 21. Please furnish statistics showing the passenger traffic between New Orleans, Mobile, and the eastern cities, and state the principal passenger routes between the points named.

Answer. The principal routes for passenger traffic between New Orleans, Mobile, New York, Boston, Philadelphia, and Baltimore are:

1. Via New Orleans, Chicago and St. Louis Railroad from New Orleans to Milan, Tenn., from Milan to Louisville via the Memphis line of the Louisville and Nashville Railroad; from Louisville via the northern trunk lines to all eastern cities. The num-

ber of passengers carried by that route from September, 1873, to August, 1875, (in two years,) were—

To New York	3,115	From New York	4,090
To Philadelphia	268	From Philadelphia	381
To Washington	360	From Washington	315
To Boston	145	From Boston	188
Total	3,888	Total	4,974

2. Via New Orleans and Mobile Railroad, from New Orleans to Mobile; via Mobile and Montgomery Railroad, from Mobile to Montgomery; via South and North Alabama Railroad, and Louisville and Nashville Railroad, from Montgomery to Louisville, and from Louisville via northern trunk lines.

3. From New Orleans to Montgomery as per route 2; from Montgomery to Atlanta via Western Railroad of Alabama and Atlanta and West Point Railroad; from Atlanta to Dalton via Western and Atlantic Railroad; from Dalton to Lynchburgh via Virginia Air-Line; from Lynchburgh to Washington via Washington City, Virginia Midland and Great Southern Railroad.

4. From New Orleans to Atlanta as per route No. 3; from Atlanta to Charlotte via Atlanta Air-Line; from Charlotte to Richmond via Richmond and Danville Railroad; from Richmond via Richmond, Fredericksburgh and Potomac Railroad to Quantico; from Quantico to Washington via steamer, or via rail by Alexandria and Fredericksburgh and Alexandria and Washington Railroad, or via same route as far as Danville, Va., and from there via Washington City, Virginia Midland and Great Southern Railroad to Washington.

5. From New Orleans and Mobile to Atlanta as per route No. 3; Atlanta to Augusta via Georgia Railroad; Augusta to Columbia, Wilmington, Weldon, and Portsmouth, Va., via coast line; from Portsmouth to Baltimore via steamer.

The total number of passengers carried to eastern cities from September, 1873, to September, 1875, two years, were—

Via routes Nos. 1 and 2, north, 5,357; south, 6,875; total			12,232
Via routes 3, 4, and 5, north, 2,906; south, 2,406; total			5,312
Total	8,263	9,281	17,544

Or 236 passengers per day, or 118 passengers per day each way.

Question 22. What are the principal transportation lines engaged in the freight-traffic between the eastern and northern seaboard cities and the Southern States east of the Mississippi River?

Answer. The lines of transportation competing for the traffic between the Southern States east of the Mississippi River and the northern and eastern seaboard cities, Boston, New York, Philadelphia, and Baltimore, have been enumerated (24 to 37) in answer to question 1.

All these lines compete with each other.

The northern trunk lines compete with the whole system of southern trunk lines and with each other for a part of this traffic to the Southern States.

The competition is mainly confined within the territory west of Nashville, Decatur, Montgomery, Mobile, and east of the Mississippi River.

Question 23. Please state the number of bales of cotton shipped from the principal interior cities of the South, and to what points shipped.

Answer. The following table shows the number of bales of cotton shipped from the principal interior southern cities, and also the points of destination of cotton:

	Bales.
Shipped from Augusta, Ga	154,426
Shipped from Macon, Ga	60,639
Shipped from Atlanta, Ga	74,185
Shipped from Newnan, Ga	8,708
Shipped from West Point, Ga	13,685
Shipped from Opelika, Ala	15,401
Shipped from Columbus, Ga	39,812
Shipped from Montgomery, Ala	59,796
Shipped from Selma, Ala	76,794
Shipped from Memphis, Tenn	393,840
Shipped from Nashville, Tenn	61,737
Shipped from Rome, Ga	23,844
Total number of bales	982,869

Total revenue derived by transportation lines, $940,721.04.

TABLE E.—*Showing the number of bales of cotton shipped from interior cities named below, and the direction in which shipped during the calendar year* 1875.

From Memphis:		
Shipped south via river to New Orleans, &c		53,836
Shipped south via rail		38,155
Total south to gulf ports		91,991
Shipped north and east via river	43,177	
Shipped north and east via rail	258,672	
Total north and east		301,849
Total from Memphis		393,840
Nashville, including through shipments from local points in neighborhood:		
To the north and east via rail		55,701
To the north and east via river		85
Total north and east		55,786
To New Orleans via rail	2,998	
To Mobile via rail	2,382	
To Selma via rail	116	
To Memphis	455	
Total south		5,951
Total from Nashville		61,737
From Rome, Ga.:		
To Savannah		13,739
To Charleston		573
To Augusta		532
To the north and east		9,000
Total from Rome		23,844
From Montgomery:		
To the north and east via rail		23,228
To the gulf, Mobile, and New Orleans via rail	24,051	
To the gulf, Mobile, and New Orleans via river	6,368	
		30,419
To Selma		2,834
To interior and local points		3,217
Total from Montgomery		59,798
From Selma:		
To Savannah		9,073
To gulf via rail		5,475
To gulf via river		11,723
To the east and north		50,523
Total from Selma		76,794

Question 24. Please to present such economic facts as occur to you proving the advantage of the transport of cotton to the North Atlantic ports and northern mills by rail, and the cost of such transportation as compared with cost of transport from the points of production to the same point by the way of gulf ports.

This may be illustrated by a statement of comparative charges by all rail and via gulf ports and sea, stating the present freight charges by rail and by sea from three points at the South, say Montgomery, Ala., Decatur, Ala., and Memphis, Tenn., to New York, Boston, Lowell, Mass. It is stated that one of the managers of a steam-line has declared that the railroads are beating him in the transportation of merchandise from New York to New Orleans and Galveston.

Answer. The advantages possessed by the all-rail lines in transporting cotton from the Southwest via Louisville and Cairo to the mills in the interior of the New England States arise from the fact that these mills can be directly reached by the railroads. If cotton is shipped by sea the high rates charged for transportation from the seaboard cities to the interior, over short distances, reduce the profit to these lines; the western rail lines establishing the rates to which the lines via eastern seaboard cities have to conform.

The all-rail lines generally carry cotton direct to the interior points at the same rates which prevail to the seaboard cities.

The rates from Montgomery, for example, to Lowell during this season were $1 per one hundred pounds, and to New York, ninety cents; to Boston, $1. The same comparative rates obtain from Memphis and Nashville.

Another advantage possessed by the western all-rail lines in carrying cotton to the East, which enables them to compete successfully with transportation lines by sea, consists in the fact that during the cotton season their greatest traffic is to the South.

The additional cost of carrying cotton in the cars, which otherwise would have to be returned empty, is so small that the railroads are enabled to carry at low rates.

When the cotton reaches Cairo, or Louisville, or Chicago, the lower cost of transportation on the northern trunk lines, as compared with the cost on the southern line, enables them to carry cotton at low rates to the East.

The advantages of all-rail lines in carrying merchandise to the South arise from the insurance charges by sea on the costlier articles.

The insurance by sea between New York and New Orleans is now ¾ per cent., which is only about *one-half the rate* formerly charged, the reduction having become necessary to meet the competition of the all-rail lines.

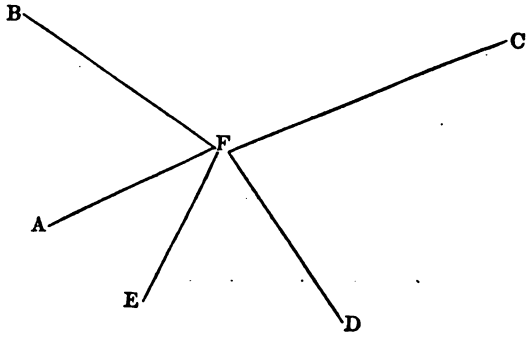
Question 25. Of the grain and other products of the West which reach the Southern States via Baltimore, Philadelphia, and New York, about what proportion do you think is by direct shipment, and about what proportion is controlled by the Baltimore, Philadelphia, and New York markets, respectively?

Answer. Very little, if any, freight is shipped from the West by direct shipments to the Southern States via Baltimore, Philadelphia, and New York. Most of this business is controlled by the markets at those places.

Question 26. Does the clearing-house attachment of the Southern Railway and Steamship Association deal with the pool business, or with both the pool traffic southbound and the divided traffic north-bound?

Answer. The association, through the clearing-house, deals with the south-bound business in first making a division of the business,* and in case this does not take place, the roads pay to each or receive from each other the cash balances which accrue from an unequal division of the business. Settlement is made on the basis of net revenue which would have accrued to each road had it carried the full portion agreed upon.

Question 27. Will you please to present one or two simple illustrations of the fact that the local traffic on a railroad is not entirely subject to such rates as a railroad company might desire to charge in order to realize the greatest amount of profit from it, but by the indirect competition of other roads in the markets to which the local traffic first alluded to must be carried? I would suggest an example of this kind:



Suppose several roads leading to a common market "F." Now the freight tariff on the local traffic of the road from "B" to "F" is governed by the competition of all like products delivered to that market by the roads entering it from "B," "C," "D," and "E."

Answer. Competition affects the local rates in several ways. 1st, referring to the example cited in the question. Suppose that "F" is a manufacturing place for flour, and the roads leading to "F" pass through an agricultural country producing wheat. If one of the competing roads reduces its rates on wheat the effect will be to bring all the wheat from that road in the market, to the exclusion of the wheat of the other roads; or if, notwithstanding the higher rates on the other roads, the farmer is obliged

* This mode of doing business is generally called "pooling," but this does not seem to me a proper term. It is a division of business brought about by settling balances in cash that result from an unequal division. Pooling is for one party to draw the whole of the business in a chance game, if I understand this term correctly.

to sell in this market, his profits are so much less than those of the farmer living on the road making lower rates, that it discourages production, and ultimately injures the railroad companies. It is, therefore, to the interest of railroad companies to meet the low rates of competitors in the same market, and reduce their rates to correspond with those established by competitors.

2d. There is another way in which competition affects the local rate. Suppose "F" to be a manufacturing place for flour, having a market for that article in a place say south of it. Take "F" to be Nashville, and its chief market to be Atlanta. Saint Louis is the principal flour market of the West, and has several lines of communication with Atlanta, all competing with each other, and with the lines from other western cities, Louisville, Cincinnati, Chicago, &c. In consequence of this competition, rates on flour from Saint Louis are reduced to a minimum. Suppose the regular established rates from Saint Louis to Atlanta are $1.16 per barrel, and from Nashville to Atlanta 72 cents, rates which are in a measure (not directly) based upon the relative distance of these markets. Now, further, suppose that in the course of competition the Saint Louis rates are reduced to 65 cents, flour can be transported from Saint Louis to Atlanta for less than from Nashville to Atlanta, and the consequence is that Nashville flour is excluded from the Atlanta market, the interest of the Nashville manufacturers suffers, their mills must be closed, there is no market for the wheat raised on the roads centering in Nashville, (as shown in your sketch.)

(NOTE.—The rates above given are the present rate. The 65-cent rate was given during a war between the competing lines. To meet this rate from Saint Louis, a rate of 55 cents was given from Nashville. The relative rates maintained are as 116 to 72, and during a fight as 65 to 55, showing a great discrimination against Nashville during a fight. Distance from Saint Louis to Atlanta more than twice as much as from Nashville to Atlanta, and differences in rate only 13 per cent.)

To prevent this, the railroad companies centering in Nashville and the roads interested in carrying flour from Nashville to Atlanta must reduce their rates to meet the competition of the lines from Saint Louis to Atlanta via New Orleans and Montgomery, or via Vicksburgh, or via Jackson, Miss., or via Meridian, Miss. Thus the local rates on the roads centering in Nashville are controlled by the distant market of Saint Louis, and the competition below the many transportation lines (which do not come within 300 miles of Nashville) between Saint Louis and Atlanta.

At first sight it will appear that the local interest around Nashville will be greatly benefited by the competition of these lines. This, however, is true only as long as the rates from Saint Louis to Atlanta are reasonable. When they become excessively low it becomes impossible for the railroads centering in Nashville to make sufficient reduction in these local rates to meet the competitive rates, not only because the local business costs more to transact, but it is the only business which the roads can rely upon for revenue; if they give it away, they have nothing. Hence they are obliged to exact larger rates than they would like to do, or larger than it is to their interest to charge. As the farmers must live, must produce something, the effect of the discrimination in the rates, which, on account of excessive low competitive rates, have to be made by the railroads, is felt in the first instance by the producers. They have to be satisfied with less profit than if the rates of transportation were more justly adjusted in proportion to the distances from the markets. Of course the railroad companies suffer indirectly from this state of affairs. It prevents a fuller development and greater prosperity of the country upon which they depend for their support, yet they are obliged by the very nature of things to exact a higher tax in order to enable them to live at all. This tax has to be made higher if these companies form a member of one of the through lines between Saint Louis and Nashville, as is the case with the Nashville and Chattanooga, and Louisville and Nashville Railroads, because they have to carry the through business to Atlanta at ruinously low rates. Were they allowed to make a reasonable profit on the Atlanta through business, they could afford to reduce their local rates, and were the through rates higher, the discriminations between their local and through rates would in themselves be less, and hence the country nearer to the markets of Atlanta would enjoy the natural advantages of their position.

It is this excessive competition and the ruinously low rates of transportation caused thereby which reverse the natural order of things. And as this competition is spasmodic, often depending upon the will of a single individual, the fortunes of people of great sections of the country, the success of their manufacturing enterprises, their prosperity, &c., are made dependent upon their slight threats.

No wonder, therefore, that great complaints about railroad discriminations have come from the people who suffer under it, and that attempts were made to prevent the same in so many of the States. Unfortunately, the people do not understand the causes and nature of the difficulties, and could, therefore, not apply the proper remedy.

It is the excessive competition, the unreasonably low rates of transportation on the competitive business, which is the cause of the difficulty, and the only remedy lies in distributing the transportation-tax more equally between all classes of shippers. The principle of

proportioning this tax *according to distance*, to establish rates based upon mileage, has been embodied in all the railroad laws that have been passed, and this principle, with proper modifications, is no doubt correct; but instead of trying to enforce it upon the railroads in a single State, it should be enforced at the same time all over the country, not applying to way business alone, but, which is much more important, to the competitive or through business everywhere.

The competitive through rates can only be established by the co-operation of all the lines; and it was to secure this co-operation and to establish rates upon the proper principle, and to maintain the same, that the Southern Railway Association was formed. This work can only be properly done in the way thus proposed; and if railroad companies cannot unite and act intelligently in this matter, guarding the interests of the people as well as their own, then the General Government ought to interfere and compel them to do it. The General Government ought not to dictate the *rates* of transportation; it should dictate only the principles on which they shall be established; it ought to see that this vast railroad property is so managed as not to injure the true interests of the people.

Take, for example, the effects of the present railroad war of the trunk lines upon interior cities. Manufactured articles are brought from New York to Louisville for 21 cents per 100. The same articles manufactured in Syracuse, and which were formerly used in this market, cost now 40 cents per 100 for transportation to Louisville. Of course the people of Syracuse lose the business.

The investments in manufactures at Syracuse become valueless; before the railroad war is at an end they may be ruined. And all this is the work of perhaps one railroad company or one railroad manager, or a number of them—it makes no difference.

Has a railroad company the right to use its property for the purpose of destroying the property of other people? Is there no remedy for such evils?

I think there is—a very simple one. If transportation-lines between New York and Louisville can carry freight for 20 cents per 100 let them do it; don't prevent them, but let them carry freight from Syracuse to Louisville for a sum not exceeding 20 cents. Enforce this law regulating common carriers; not to make unjust discrimination against the transportation lines of the whole country, not only against the roads in one or more States, and these ruinously low competitive rates will, as a natural consequence, be abandoned, or if they can be maintained, if they be reasonable in themselves, let the local rates be graded down accordingly.

But I have wandered from the subject of the question, which led me to refer to the causes of discrimination, their effects and remedy. In direct answer to the question I intended to refer to one more mode in which competitive through rates affect local rates, and this I have more fully explained in the report of the Louisville and Nashville Railroad, 1873–'74, page 55, regarding the effect of competition at Memphis upon the local rates from Louisville to points on the Memphis line. There being water competition between Louisville and Memphis, the rates from Louisville to any local point on the Memphis line must be based upon the rate by river to Memphis plus the rail rate from Memphis to that local point.

As the Memphis line (between Louisville and Memphis) is intersected by the Cumberland and Tennessee Rivers and by four railroads, it establishes six additional competitive points on that line, and every station on that road is affected by competition. The rate from Louisville to it is established by adding to the competitive rates at the next competitive station, the local rate for the short haul from that competitive station; and the latter rate being limited by law, it follows that each local station feels the advantage of competition.

Question 28. Will you please to present data illustrating the growth of north and south bound business over the Louisville and Nashville Railroad?

Answer. The following is a statement of the south and north bound tonnage on the main stem of the Louisville and Nashville Railroad for the years named:

Year.	Tons transported one mile—		Remarks.
	South.	North.	
1866–'67	16, 303, 691	7, 610, 020	Page 108, Report of Louisville and Nashville Railroad.
1867–'68	15, 070, 261	10, 120, 181	Page 125, Report of Louisville and Nashville Railroad.
1868–'69	19, 668, 473	14, 140, 946	Page 107, Report of Louisville and Nashville Railroad.
1869–'70	29, 772, 825	16, 664, 833	Page 113, Report of Louisville and Nashville Railroad.
1870–'71	37, 102, 953	21, 569, 012	Page 125, Report of Louisville and Nashville Railroad.
1871–'72	48, 363, 747	28, 848, 424	Pages 50 and 51, Report of Louisville and Nashville Railroad.
1872–'73	51, 896, 162	34, 581, 650	Page 119, Report of Louisville and Nashville Railroad.
1873–'74	46, 148, 124	34, 079, 331	Page 74, Report of Louisville and Nashville Railroad.
1874–'75	43, 968, 044	29, 698, 722	Page 103, Report of Louisville and Nashville Railroad.
1875–'76	36, 993, 877	37, 863, 677	Page 36, Report of Louisville and Nashville Railroad.

The increase of tonnage in 1869–'70 and 1870–'71 over the previous year is due to the business from the Memphis line which was opened in 1867, but its business had not been fully built up before 1869.

The increase of north-bound in 1872–'73 over previous year is partly due to the opening of the South and North Alabama Railroad. The reduction in 1873–'74 in south-bound is the effect of the panic, and the continued reduction in south-bound tonnage since that year may be ascribed to the fact that the South is producing more of its own provision and is importing less. It is also partly due to increased competition.

Question 29. Please to present two or three examples showing the manner in which water-rates regulate rail-rates in the transportation of cotton. First, cotton at Jackson, Miss., bound for Cincinnati on its way East, how will the rail-rate be governed by the water-rate during good stages of navigation; or, rather the rate by all-rail from Jackson to Vicksburgh, and thence to Cincinnati by river? Second, the extent to which the all-rail rates from Jackson, Memphis, and New Orleans to Providence, R. I., are regulated severally by the competitive water-rates, *i. e.*, Mississippi River and ocean?

Answer. The various competing routes from Jackson, Miss., to New York, each of which can establish its own rate and to which the others have to conform, are the following:

1. From Jackson to Vicksburgh by rail, from Vicksburgh to Saint Louis or Cairo, or Evansville, or Louisville, or Cincinnati, or Huntington, or Parkersburgh, or Pittsburgh by river, and from either of these places, by rail, to New York.
2. From Jackson to Vicksburgh by rail, from Vicksburgh to New Orleans by Mississippi River, and from New Orleans to New York by ocean.
3. From Jackson, by rail, to New Orleans, and from there, by ocean, to New York.
4. From Jacksonto Meridian by rail, from Meridian to Selma, and from Selma by the Western Railroad and Selma, Rome and Dalton Railroad and their various connections, to New York.
5. From Jackson, by rail, to Cairo, and from there to New York by rail.
6. From Jackson to Milan by rail, thence to Louisville and East by rail.

There are other combinations of routes not necessary to mention, as they do not carry any portion of the business.

The all-rail rate has to be adjusted to meet the rate of the combined water and rail route. The route via Vicksburgh, New Orleans, river, and ocean, or the route via Vicksburgh and the Mississippi River to any of the points on the Ohio River mentioned in the first route are availing themselves of the cheap water transportation and determine the rate. The all-rail routes can charge, in addition to the combined water and rail route, the difference in insurance, and perhaps something additional for quicker time and less handling. At present the rate established by the *rail and ocean* route from Jackson to New York is $1.20 per 100 pounds on cotton, and the *all-rail rate*, in conformity thereto, is $1.25 per 100.

(NOTE.—To illustrate the effect of water competition still farther, take the rates from Memphis to Cincinnati by river, which are from 50 to 75 cents per bale or from 10 to 15 cents per hundred. The distance by rail from Memphis to Cincinnati is 485 miles. The railroad has to take cotton in competition with the river for from $\frac{1}{10}$ to $\frac{1}{10}$ cent per ton per mile, which they could not do without loss were it not that cars would otherwise be obliged to return empty.)

Question 30. When the Illinois Central Railroad endeavored to obtain control of New Orleans traffic, did it enter into that line of policy with a view of developing new business between Chicago and New Orleans, or of deflecting business from New Orleans to Chicago which had heretofore gone over other roads; and if it attempted such deflection of business, was that attempt made by means of a discriminating through-charge in favor of the Illinois Central Road as against the Iron Mountain Railroad at Columbus, the Louisville and Nashville Railroad at Humboldt, and the Cairo and Vincennes Railroad at Cairo?

Answer. Railroad companies endeavor to influence business over their lines in the manner described in the question. It was no doubt the intention of the Illinois Central Railroad, when they aided the New Orleans and Jackson Railroad, to control business in that way; but their contract with that company only stipulated that the New Orleans and Jackson Railroad should not do any business with any other road between *Chicago and New Orleans*, but should direct their whole traffic over the Illinois Central Railroad. The agreement was not well considered on the part of the Illinois Central Railroad. It left the New Orleans and Jackson Railroad free to work with other connecting roads—to Louisville, Saint Louis, &c., and its relation to other connecting roads were such that it could not afford to discriminate against them and in favor of the Illinois Central. For example, when the Illinois Central Railroad, in connection with the New Orleans and Jackson Railroad, reduces the rate from Chicago to New Orleans in order to throw business to Chicago, the Louisville and Nashville Railroad claimed that a corresponding reduction should be made between Louisville and New Orleans. Had the New Orleans and Jackson Railroad refused to co-operate with the

Louisville and Nashville Railroad, the latter company could have directed its business over its Montgomery line to New Orleans. The disadvantage to the New Orleans and Jackson Road would have been much greater than the benefit it could derive from the business of the Illinois Central Road. Practically, the aid afforded by the Illinois Central Road to the New Orleans and Jackson Road has been of no benefit to the Illinois Central Road.

Question 31. In order to set forth clearly the question as to the force of the competition between markets, will you please to give two or three illustrations of the competitive power of the Chicago, Saint Louis, Cincinnati, and Louisville markets for western products at points in the South?

Please also to present an illustration of the competition between western and eastern markets at Atlanta, showing how such competition influences rates on the various trunk-lines. It is suggested that you assume the articles of beef or pork in barrels. In carrying out the illustration, it strikes me that you might show how such competition directly or indirectly affects freight-rates, not only from the various markets mentioned to Atlanta, but the rates from the western markets to the eastern markets, and also the rates from the eastern markets to the southern markets, and indirectly the rates on vessels bound coastwise.

Answer. It is generally supposed by the shipping community that railroad companies arrange their tariff arbitrarily, and hence they are generally designated "monopolies." This is a great mistake. The conditions which regulate their tariffs are in most cases beyond their control; and all that railroad companies can do is to study their conditions and to conform to the same.

It would not do for the roads from Louisville to the South to establish a certain tariff, say from Louisville to Atlanta, (on bacon for example,) without taking in consideration the tariff on the same article from competing markets, not only the freight-tariff, but also the market-value of that article. If the tariff from Chicago or Saint Louis to Atlanta was lower than from Louisville, the roads interested in the Louisville commerce could not expect to do any business. Should, in addition to these lower freight-charges, Saint Louis or Chicago enjoy other advantages, by which they may produce bacon cheaper than Louisville, the roads centering in Louisville are interested to see that the Louisville producer of bacon is not excluded from the market of Atlanta by offering lower rates. The competition between railroad companies is really a competition between the different markets or communities they serve. They cannot neglect the interests of the merchant and manufacturer. In serving them they serve themselves. Strange to say, to all appearances, the merchants and railroad companies do not act together; there is apparently a constant conflict between them. For this there is generally no good reason, and it should not be so. To illustrate the effect of the competition between different markets and the manner in which rates of transportation are influenced, and have to be adjusted with regard to that competition, I will mention the present adjustment of rates on bacon between some of the competing western markets and Atlanta.

They are as follows:

To Atlanta.	From—			
	Louisville.	Cincinnati.	Saint Louis.	Chicago.
Per 100 pounds of bacon.....	51	65	65	70

These rates are established by agreement between the different transportation-lines serving the cities named, and are based in a measure (although not in direct proportion) upon the respective distances of those cities from Atlanta. Chicago is 63 per cent. in distance farther from Atlanta than Louisville, while the increase in rates is only about 40 per cent.

Now, suppose that any one of the transportation-lines working out of these various cities should reduce its rate below those named, (to any considerable extent,) it follows that the lines working from the other cities must reduce their rates also *if they would not change the relative value of the article in the different markets, and allow the trade to be monopolized by the city offering the lowest rates of transportation.*

As soon, therefore, as the rates from one city are reduced, the rates from all other cities must of necessity be reduced also, as each railroad company or transportation-line has the right to establish what rate it pleases, but one is depending upon the other. Agreements are generally made (not, however, often without a railroad war) as to the relative rates that should be charged from each city to a common market. The

principle upon which rates are regulated is to give each of these markets a fair chance of selling its goods.

These rates are not merely a question of distance from the market. If the principle be adopted that the rates from the respective markets should be in proportion to distance, it would soon be found that more distant competing points would be or could be entirely excluded from those markets. If they possess routes independent of those that are nearer to the point of competition, by which they can reach it, they will not submit to this. Take for example Chicago, which is 777 miles from Atlanta, while Louisville is only 424. The rate from Louisville to Atlanta on bacon is 51; from Chicago, 70. Were rates made in proportion to distance, the Chicago rate should be 84 cents. The Chicago lines object to so much difference, and a 70-cent rate is adopted as a compromise. Thus it happens that while a Louisville merchant has to pay 51 cents to Atlanta, a Chicago merchant shipping through Louisville pays less per ton per mile than the Louisville merchant. This does not seem right, yet it cannot be avoided. If the Louisville roads would insist upon reducing its rates, to make it a pro rata according to distance of the 70-cent Chicago rate, or about 43 cents, there would be nothing to hinder the Chicago lines, who can ship their bacon to Atlanta without passing through Louisville, at any rate they choose, to make a still lower rate.

The attempt to underbid each other in the different markets would lead to low, unremunerative rates to all the transportation-lines. Hence the relative rates from competing markets are or ought to be made the subject of mutual agreement. Any one railroad or any one city cannot expect to monopolize the whole business of a country. There must be a reasonable and fair distribution among all the centers of commerce, and as far as that distribution is influenced by rates, it must be made a subject of mutual compromise. It cannot be settled by force.

Millions of dollars are now uselessly wasted by the trunk-lines in the attempt to determine (by warring upon each other) the relative rates which should be charged on grain to New York, Philadelphia, and Baltimore. In the mean time a certain distribution of the business takes place. No one line gets it all, or can expect to get all. (The Baltimore and Ohio Railroad claims that it gets more under the present condition than it got before.) Would it not be better to settle this question by mutual agreement, determine upon the relative rates upon an equitable basis, upon the principle of distance and fair proportioning of the traffic, rather than to destroy each other in the attempt to overreach each other?

Here you have a fair example of how the markets control railroad companies' tariffs. The war between the trunk-lines is a war waged for the interests of each city with which each road is identified. I have illustrated how competition between the different markets influences and regulates railroad-tariffs in case of certain cities to one common point. But this influence is not confined merely to certain cities, but is felt between different sections of country, and has to be considered in establishing railroad-tariffs. Certain articles are manufactured in the East and in the West; for example, furniture, machinery, iron, bagging, &c. The tariff from the western manufacturing places to common points in the South have to be arranged with a special view to the rates made from the eastern places of manufacture. The railroad companies serving either section of country cannot arbitrarily fix their tariffs. Here again they are subject to the laws of competition between markets.

Touching the competition existing between the western lines of transportation to the South and the eastern lines from the West to the South, I refer you to the following rates between the cities named to Atlanta and Charleston and Savannah:

Per 100 pounds of bacon.	From—			
	Louisville.	Cincinnati.	Saint Louis.	Chicago.
To Atlanta	31	65	65	70
To Charleston and Savannah	39	50	50	57

You will see that the rates to Charleston and Savannah on freight passing through Atlanta are lower than those to Atlanta, and this is due to the competition of the eastern trunk-lines in connection with the ocean lines from New York, Philadelphia, and Baltimore to Charleston and Savannah.

At these points the cheaper water-transportation makes itself felt, and these cheaper rates to the seaboard cities influence the rates to the interior cities. Were it not for the low rates to Savannah and Charleston the rates to Atlanta would no doubt be made higher.

Question 32. Please to express your views more fully as to granting special rates to individuals, and show why you consider such special rates (where the quantity equals a car-load) to be opposed to public policy, and calculated to arouse in the minds of the people a feeling of animosity toward railroad management.

Answer. It is sometimes urged that railroad companies should grant lower rates on large shipments, upon the same principle that wholesale merchants can sell cheaper than retail merchants. The same reason why wholesale merchants can sell cheaper than retail merchants do not apply to the case of large or small shipments on railroads when we have reference merely to car-load shipments. The cost of retailing merchandise is much greater than the cost of selling it in large quantities. It requires a different kind of an establishment, larger warehouses in comparison with the goods stored, more clerks, longer time to sell the same quantity of goods, slower returns, &c.

In the case of shipments on railroads in less than car-loads, the cost will be greater than full car-load shipments—not always, but as a rule. Cars cannot be fully loaded, when a number of small shipments are made, which have to be unloaded at different stations. After unloading one shipment at an intermediate station the train has to proceed with a smaller load, but without reducing expenses in proportion. It is therefore proper that the shipper should pay the additional cost. There is good ground for discriminating between small and large shipments. But when shipments are made by the car-load, where it is merely a question of one or more car-loads, no additional cost is incurred by the railroad company.

Whether these shipments are made by one or by many shippers it costs the same. It costs no more to ship car-loads of freight between two stations of a railroad whether they belong to one shipper or to ten shippers, whether one man ships ten car-loads or ten men ship one car-load each. There is no ground for discriminating in favor of the large shipper. Any discrimination made in his favor is entirely arbitrary.

There is no rule, no principle on which it can be established or defended. All arbitrary discrimination works injustice to others.

Take a flour-mill producing ten car-loads of flour a day, and alongside of it at the same station a mill producing only one car-load. The railroad company decides that it will give to the larger mill a rebate of 25 cents a barrel. This of itself constitutes a fair profit.

The large mill can undersell the small mill in any market in which they are competitors. It can sell at cost and make 25 cents per barrel profit, when the other mill, if it wants to sell at all, must sell without any profit at all. This leads to breaking up of the small establishment, and the railroad company is the instrument through which it is accomplished.

A common carrier has no right to make itself a party to such transactions. Moreover, it is not to its advantage to do so. This policy of discrimination prevents the employment of small capital, and prevents the building up by slow degrees the industries of the country. Only large capitalists can afford to carry on business, and they are not always to be found. From small beginnings, if properly fostered, large enterprises are built up. The larger manufacturers enjoy already sufficient advantages over the smaller. Being able to produce cheaper, they do not require the aid of railroad companies to still farther discriminate in their favor.

Question 33. Have you the information from which you can state, in general terms, in what respect the German Railroad Union resembles a Southern Railway and Steamship Association? Does the plan of pooling enter into the workings of the German Railway Union?

Answer. The German Railway Union takes into consideration all subjects in which railroad companies are mutually interested, as well as such in which co-operation is absolutely necessary between certain railroad companies in order to conduct business properly. It takes into consideration all technical subjects, the best mode of constructing and operating railroads; it endeavors to secure the best and uniform mode of constructing and operating railroads; it endeavors to secure the best and uniform modes of constructing rolling-stock and adoption of uniform signals, &c. But it is only a deliberative body. It has no power to enforce its decrees; free consent of all the members is required for that purpose.

Besides the German Railway Union there are the German Railway Werbünde, which are unions formed by separate groups of railway companies having closer business relations. These werbünde resemble more the Railway Association of Atlanta. They take in a number of railroads in certain sections of country, although they have no executive officers, but carry on business in the same way as our freight-agents' and ticket-agents' and superintendents' conventions. They agree, as our conventions do, upon rates of passenger and freight traffic, interchange of traffic, exchange of cars, compensation to be paid for car-mileage, &c., settlement of balances arising from interchange of traffic, &c. They may be considered in all respects answering the same purpose as our railway conventions formed by a number of interested railroad companies. Upon this imperfect mode of transacting business the Atlanta Association is a great improvement.

Question 34. Please to present your views as to the limit of capacity of both single and double track railroads, and the small proportion of capacity utilized in practice.

Answer. I estimate the capacity of a single-track road at 36 trains per day in each direction, and of a double-track railroad at 72 trains.

These estimates, I think, are rather below than above the actual capacity, which I think might be taken as 25 per cent. more; but I wish to be on the sure side. To estimate the freight-carrrying capacity upon roads upon which both freight and passenger trains are run we have to deduct the number of passenger-trains from the above number of total trains. The number of passenger-trains generally bear certain relations to the number of freight-trains; the larger the latter, the smaller the former. I will assume one-fourth of the trains to be passenger-trains, leaving the number of freight-trains on a single-track road 27, and on a double-track road 54, in each direction daily.

In order to determine the number of tons of freight that can be moved by so many trains, we have to know the gradients of the roads, the loads that can be drawn by a locomotive, the tractive power of the locomotive, the character of traffic, that is, the relative proportion of traffic in each direction of the road, and the relative amount of through and way business, as affecting the average load that may be hauled in a car. These conditions we must assume. I will estimate the number of car-loads that may be drawn by a locomotive, as determined by gradients and tractive power on four different roads, at 20, 25, 50, 100 cars, and the average load hauled by each car at 6 tons; accordingly we have the freight-carrying capacity of these roads for single and double tracks as shown in this table:

Number of cars in train	20	25	50	100
Number of daily trains, single track, 54.				
Number of daily trains, double track, 108.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Capacity, in tons, per year of 365 days, single track..	2, 385, 200	2, 956, 500	5, 913, 000	11, 826, 000
Capacity, in tons, per year of 365 days, double track	4, 770, 400	5, 913, 000	11, 826, 000	23, 652, 000

These estimates will appear large. They have not been tested practically, but I know of no reason why they should not be correct. There has been no chance for a practical test, but on the Philadelphia division of the Pennsylvania Railroad, I am informed, as many as 92 freight-trains and 19 passenger-trains were moved in each direction in six hours; if this be practical on one division it is on a whole road.

The question of terminal facilities enters, of course, into the consideration of this subject, and the capacity of a road may be limited on that account. It must be borne in mind that, in assuming that 100 cars can be carried in a train, we assume a perfectly level road, but the estimate of 50 cars is based upon a limiting grade of about 20 feet per mile, which it may be practical to obtain, between the East and West. The estimate of 25 cars to the train is realized on the Pennsylvania Railroad, and on the New York Central Road is greatly exceeded.

To compare the ultimate capacity of single and double track roads with the actual carrying capacity, we have the following results for single track:

Main stem Louisville and Nashville Railroad, average tons carried per mile of road per year	433, 662
Estimated capacity, (at 25 cars per train)	2, 486, 500
Memphis line, average tons carried per year	152, 273
Knoxville branch, average tons carried per year	72, 456
And for double-track Pennsylvania Railroad, 1875	3, 912, 260
Estimated capacity	5, 913, 000

This will show the small proportion to which some of the single-track railroads are taxed. Even the Pennsylvania Railroad is only taxed to its full capacity, taking the whole line. No doubt on some portions of it, between Philadelphia and Harrisburgh for example, it may be taxed nearer to its full capacity. The New York Central Railroad carries less freight than the Pennsylvania; the exact amount on its main line does not appear from the report, but the total number of tons carried on main line and branches, 1,000 miles of road, is not more than the total ton-miles carried between Philadelphia and Pittsburgh on 358 miles of roads; the New York Central on account of its lighter grades and greater loads it can haul per train capacity—50 per cent. greater than the Pennsylvania Railroad. It was therefore unnecessary to build two additional tracks, (at an expense, I believe, of $27,000,000.) It is true that the passenger traffic is greater on the New York Central than on the Pennsylvania Railroad, yet the capacity of the double-track road was not yet taxed sufficiently to justify the outlay of the third or fourth track.

The folly of building new railroads parallel with those already built—for example, a four-track railroad for freight alone—the favorite plan of some people, will also be fully shown if you consider the carrying capacity of the existing roads, and the fact that without any further outlay of capital they can and now do carry as cheap as

freight could be transported on the four-track railroad exclusive of interest on the capital to be invested in it.

Pertinent to the subject of your inquiry, I will copy some parts of a letter addressed to Theo. Lees, esq., general agent of cheap transportation association, in answer to an inquiry made in regard to the policy of building a double-track road between Chicago and New York for freight purposes alone. The letter was written November 11, 1874:

"I estimate the cost of transporting one ton per mile on a double-track freight railroad at $\frac{88}{100}$ cent, and $\frac{1}{10}$ cent additional for interest; total, $\frac{3}{10}$ cent. I think this is the minimum cost to which railway transportation could possibly be reduced, but in order to obtain this result there must be a constant flow of traffic over the road, amounting to at least 18,000,000 tons per annum in one direction, and one-fourth of that in the other." So large a tonnage cannot be obtained for some time to come. The Erie Canal now only transports 2,400,000 tons of freight to the seaboard, and the four trunk roads about the same, making an aggregate of about 5,000,000 tons.

"In the above estimate the grade of the road is assumed to be only 25 feet to the mile, the cost of the road and equipment $120,000 per mile, the capacity of the locomotive 45 cars, each carrying 27,000 pounds of net load in one direction, and the number of trains 96 each daily.

"The difficulty of securing cheap railroad transportation consists in sufficient tonnage to tax a road of this description to its full capacity.

"In order to secure cheap transportation, the concentration of traffic upon the lines already constructed to the full extent of their capacity seems to me to be the first step. For these reasons the plan of the Congressional Committee on Transportation to the Sea-board, suggested in their report, to construct several additional roads and canals, does not recommend itself to my judgment. I am rather inclined to think that we have now more roads than we have business to support them.

"Forty per cent. of the cost of operating the present roads belong to a class of expenses which have to be incurred regardless of the amount of business transacted. On the Pennsylvania Road the average cost in 1872 was $\frac{83}{100}$ cent per ton-mile, which includes the cost of local business. The average cost of through business I estimate at 0.55 cent per ton-mile; of this 40 per cent. are expenditures incurred regardless of the amount of business carried over the road; hence it follows that the additional cost of transportation is not more than 0.32 cent per ton-mile. This road could afford to carry at a rate of 0.55 cent all the additional business until its full capacity is reached and make a net profit of 40 per cent. on this additional business. The same would be the case with the other trunk-lines. This illustrates the great advantage of concentrating traffic upon the roads already built rather than to build new roads.

"With only 5,000,000 tons of freight per annum transported over a double-track freight-road costing $120,000 per mile, the interest charged at 10 per cent. alone would be $\frac{120{,}000}{5{,}000{,}000} = \frac{24}{100}$ cents per ton-mile, and the cost of operations would be not less than 0.4 cent per ton-mile, or total cost 0.64 cent.

"I have no doubt but that the trunk-lines would be willing to contract with you to carry all the grain from the West at 0.55 cent per ton-mile, if you would agree to furnish business to the full capacity of their roads during the whole year. At least it would be readily shown that they would make money by carrying freight at this rate and under these conditions. By this view of the case it would appear that an additional investment in a double-track road, with the present amount of tonnage (about five million tons) seeking the sea-board, would not tend to a reduction of the cost of transportation by rail.

"But there is another view to be taken of the case. Supposing that the cost of transportation by rail could be reduced to $\frac{3}{10}$ cent per ton per mile, the question arises whether this would tend toward securing a market for 18,000,000 tons east-bound and 4,500,000 west-bound. (The estimate of $\frac{3}{10}$ cent per ton, in case of a new double-track railroad is to be built, is based upon these conditions.)

"A market to this extent is to be created in order to secure this cheap rate of transportation. Whether this can be done or not is more of a commercial than an engineering question, and I suggest that the Cheap Transportation Association make inquiries in that direction, if it has not already been done.

"The estimates given above are based upon the assumption that the freight to be transported is collected at one point, and passes thence over the whole length of the double-track road. To collect it at that center from the place of production will of course cost more. I estimate the average cost from 1½ to 2 cents per ton per mile."

Since the above was written the cost of transportation has been considerably reduced, on account of the reduction in cost of labor and material, the use of steel rails, &c. On the Pennsylvania Road the cost per ton per mile in 1875 was 0.606 cent, instead of $\frac{83}{100}$ cent in 1868. The estimate presented in the above letter should therefore be reduced. But, for sake of comparison, they are sufficiently correct, and the result may be summed up as follows:

It will cost $\frac{3}{10}$ cent per ton per mile on a road specially built for freight-traffic, in-

cluding all the expenses entering into the operation of such a road, with interest on investment, but under conditions as regards amount of traffic that cannot be realized, at least for many years to come. It will cost $\frac{6}{100}$ cent per ton per mile on that road, if the whole of the present traffic to the seaboard (5,000,000 tons) could be thrown upon the road, and it will cost only $\frac{3}{100}$ cent per ton per mile upon the trunk-roads already built; that is to say, the net cash cost. Leaving out the interest-charges on the proposed new road, the actual cost of operation on it would be $\frac{3}{100}$ cent and $\frac{1}{10}$ cent, under a tonnage of 22,500,000 and 5,000,000 respectively, and on the existing roads it would be $\frac{3}{100}$ cent. Bearing in mind that the conditions under which the above cost is obtained on the proposed new road cannot be complied with, while the cost on the roads already built is not a matter of surmise but a demonstrable fact, the policy of investing additional capital in the construction of new roads must be condemned.

Question 35. Please to estimate or compute the effect of the reduction of through rates, say a reduction of 10 cents per 100 pounds, on the receipts of two or three principal railroads of the country. For example, what reduction would be caused in the receipts on the through business of the following-named railroads in consequence of a reduction of 10 cents per 100 pounds: Louisville and Nashville Railroad, Pennsylvania Railroad, and one or two other railroads which furnish the necessary statistics?

Answer. The reduction on the main stem of the Louisville and Nashville Railroad in 1874–'75 of 10 cents per 100 pounds on through freight between Louisville and Nashville, 185 miles, would have amounted to $461,964; and on the Memphis line, 377 miles long, $316,430. But it must be borne in mind that the rate on some classes of through freight between Louisville and Nashville is not more than nine cents, and on the Memphis line 16 cents, per 100 pounds.

The reductions that actually have taken place during the last few years will appear from the following statement, which includes, however, local freight, and all the roads operated by the Louisville and Nashville Railroad—920 miles:

Reduction in 1874 over 1873, on 146,023,812 ton-miles, 0.10 cts. per ton-mile..	$146,033
Reduction in 1875 over 1874, on 136,122,236 ton-miles, 0.23 cts. per ton-mile..	312,081
Reduction in 1876 over 1875, on 143,482,664 ton-miles, 0.07 cts. per ton-mile..	100,437
Total in three years	558,551

On the Pennsylvania Road, between Pittsburgh and Philadelphia, 354 miles, the reduction of 10 cents per 100 pounds on through freight in 1875 would have amounted to $2,708,406.

The reductions which have actually taken place since 1873 on the Pennsylvania Road, including its branches between Pittsburgh and Philadelphia, and including local traffic, is as follows:

In 1874 over 1873, on 1,372,566,976 tons, at .0135 cents per ton-mile	$2,147,478
In 1875 over 1874, on 1,497,414,460 tons, at .0197 cents per ton-mile	2,914,445
Total in two years	5,061,923

The rates charged per ton-mile in 1873 were 1.41 cents; in 1874, 1.255 cents; in 1875, 1.058 cents.

Question 36. In an attempt to set forth the distinction which should be made between just and unjust discriminations, do you not think it would be proper to regard the classification of freight as in the nature of just discriminations, upon the basis of space occupied, value of commodity, cost of handling, quantity transported, risk, &c.?

Answer. The classification of freight, the difference in charge generally made between the several classes, cannot alone be justified upon the basis of cost. The cost of transporting the costliest and the cheapest goods differs only in the insurance and handling. While discriminations of upwards of 400 per cent. are made in rates of freight, the insurance on rail would perhaps not amount to ¼ per cent. of the value of the goods. Only in a few cases would this insurance amount to the difference in rates per 100 pounds, but as a general rule it does not.

The discrimination made in classification is based upon the commercial principle that some goods cannot be moved at all except at low rates of transportation and that others can stand the higher charges without diminishing the consumption.

Discriminations upon this principle, if properly made, are justifiable. They work to the advantage of the people and of the railroad companies. No injustice is done to any one.

Question 37. Please to specify such practices on the part of railroads with respect to freight classes which may fairly be denominated unjust discriminations.

Answer. One of the usual discriminations made by railroad companies is to carry freight for long distances at greatly reduced rates compared with freight over short distances. While the latter costs more, yet discriminations in favor of the former are frequently out of all proportionate cost. Whether such discriminations are just or unjust depends altogether upon the condition under which they are made, and even

upon the motive from which they are made. The facts in two cases may be exactly alike. I mean the relative rates charged upon two lines of transportation between long and short distances; yet, in one case, the discrimination may be just, in the other unjust. To illustrate this: Suppose that river competition at the terminus of a line of transportation makes low rates to the terminal point necessary; higher rates to intermediate points are then not only necessary but justifiable. (Please refer to pages 55 and 56 of my report, Louisville and Nashville Railroad, 1873-'74, for further explanation.) Again, suppose that at the terminus of a line of transportation railroad competition is met, and in that competition, as a measure of injury to another line, rates of transportation are made very low, leading to discrimination (high rates) for intermediate stations. Bear in mind that these low rates are not made because the railroad company thinks it to its interest to do so and with the view of maintaining them permanently, but they are made as a temporary war measure with the view of injuring the other party, and practically resulting in injuring the aggressor during their continuance. Suppose even that the rates are not made lower in the case of road competition than they are made in the case of river competition as first supposed; but compare now the effect of the discrimination in each of the supposed cases.

In case of the river competition the low rates result from natural causes that have existed at all times and will continue to exist. The railroads and the country have had to adapt themselves to these conditions. A railroad built through an interior country, connecting two commercial communities having the advantage of river transportation, only improves the transportation facilities of the interior points. It does not change the relations existing between these interior points and the river points in any other way. These discriminations—charging higher rates to the interior stations than to the river points, although the former are nearer—have existed, and this to a greater degree. The construction of the railroad does not create, but necessarily diminishes the same. There is no injustice done to any one. This kind of discrimination is perfectly just. But in the case of extraordinary low competitive rates that are not and cannot be permanently maintained, made only for the purpose of warring upon a competing line, the effect upon the public is entirely different and is very injurious. That act is an arbitrary act, not based upon the nature and condition that should control the relations of different commercial communities. The measure is intended to be only temporary in its operations, not permanent. I have already referred to the results in my answer to question 4; to some of the necessary consequences upon the industries at interior places. The value of articles of commerce, commercial relations between the different communities, are unsettled for a period of time of more or less duration, and great injustice is done to many interests. A feeling of insecurity in all investments is created, and from this cause the development of the resources of the country is retarded.

All this may be the arbitrary act of a single corporation perhaps, or of an individual. Discriminations such as these are unjust and should be forbidden by law. They are forbidden by law now, but the law is not enforced.

There can be no objection to low competitive rates, but, whenever made, they should be made under two conditions: first, they must be permanent; they should not be materially changed except the conditions respecting cost, &c., make a change proper; and, second, the rates to intermediate points should be reduced, if not in direct proportion, at least in some measure and upon correct principles that would not work injury to the interior points. No restriction should be imposed upon any common carrier as to lowering its rates of transportation to any two points it may choose, but restriction should be imposed forbidding it to make unjust discriminations at intermediate points. I have in the above endeavored to explain why I consider excessive low competitive rates, made temporarily for the mere purpose of warfare by one company upon another, as unjust discrimination. There are other unjust discriminations made resulting from the same motive.

The practice of making special contracts with some shippers—the larger shippers generally—at lower than regular rates, and charging the regular rates to all other shippers, constitutes one of the most unjust discriminations. It is practiced to a great extent. The rates of transportation between two points should be the same to all shippers. The payment of rebates, drawbacks, by which means their unjust discriminations are practiced, should be forbidden.

Question 38. Do you not think that the advantages of cheaper transportation at competitive points tend very largely to the development of manufacturing interests at the principal railroad centers, and thus to the development of such centers, to the detriment, perhaps, of the smaller towns? In other words, do you think that the general tendency of our railroad system is toward the development of the larger cities, or toward the increase in the number of small trading and manufacturing towns?

Answer. I have shown in answer to question 5, page 7, the effect of low through rates, and higher rates to intermediate points, in the case of Syracuse. The same influences are at work everywhere, and must result in building up great centers of trade and manufacturing places, and prevent the building up of interior places, where com-

petition is restricted and will ultimately ruin those already existing. I do not think this is to the advantage of the railroad companies or to the people at large. Local natural advantages possessed by interior points are thus made inoperative. It seems to me to the interest of each railroad company to foster local enterprises—at any rate not to discriminate against them—and to build up business and population on its own line of road instead of concentrating it in a few great centers, where it is open to competition to many other lines.

Question 39. Suppose a general clearing-house system to be established throughout the country under governmental authority. If, after all the roads now in operation had given in their adhesion to the plan, *assume that a new road should be built*, say from New York to Chicago, which should refuse to enter the clearing-house arrangement, and should reduce its rates below clearing-house rates, and thus secure an enormous through traffic, would not the clearing-house roads be obliged to make war upon this new-comer, just as the trunk roads are now doing in regard to the New York Central Railroad? If in such a case the Government were to interfere and force the dissenting line to make clearing-house rates, would not this be likely to arouse the sentiment among the people that the Government was arraying itself against the public interests, and thus inevitably lead to the speedy and disastrous overthrow of the whole clearing-house system?

Answer. A clearing-house railroad association, on the plan of the Southern Railway and Steamship Association, under governmental sanction, should include all roads; but if it does not, then there is no other remedy than the one you propose. In case of any one road making war, all the others have to follow. It is to avoid this that the intervention of the Government is wanted. But this interference is not to be direct, compelling the new road to make higher rates than it wishes to, (in the case you suppose,) but it is merely to force the new road to submit to the decision of an arbitration or a court of appeals any questions of difference it may have with the old roads.

The interests of that new road are to be respected and guarded as well as those of the old. If that new road can afford to work for half the rates charged by the old ones, it ought not to be forced to make higher rates. The others will have to conform to such rates. But if the management of that road should make, temporarily, very low rates, war-rates, in order to gain a certain object, or to injure other roads as well as itself, and thereby unsettle commercial business all over the country, with a view of afterward forming again combinations and charging unreasonably high rates, then the arbitrators or court of appeals would decide against such a course, and remedy the cause for which the war is to be undertaken by securing full justice to the new road.

The Government is not to interfere directly in this matter, except to give legal force to the decision of the arbitrators.

Question 40. Will not such a clearing-house system as you propose require constant adjustment as to "pooling" and division of traffic? If prorating is made on the basis of cost of transportation, will it not be necessary to have as full and complete economic statistics as those prepared by you in regard to the Louisville and Nashville Railroad, in order that the adjustment may be properly made, basing the prorate of each road on the actual cost of doing competitive business? And does not this presuppose a thorough re-organization of accounts and a change of policy with respect to publicity on every road which now pursues the policy of the concealment of its doings?

Answer. The clearing-house system requires constant adjustment, or may require it. New roads may come in, old roads may assume greater strength, &c. Whenever any one of the parties thinks it has good reason to ask for a new adjustment of division, &c., its claim should be submitted to arbitration if agreement cannot be voluntarily made. The business transacted by each road is known by all the others. The publication of the Southern Railway Association shows the business transacted by each route from and to each place. (See circular No. 30.) This publicity is what we want; it would lead to the settlement of many questions that now form the subject of unnecessary controversies. The clearing-house would keep all accounts in regard to traffic. The relative cost of operating roads does not come into consideration. Of course each company ought to know the cost of operation of its own road.

* * * * * * *

There is nothing impracticable in the Southern Railway and Steamship Association, except that it is a voluntary association. Make its operation legally binding upon all parties by proper legislative action, and the success of the association is secured. But of course the impracticable part is, that the Government or the people cannot be made to see the necessity of the organization for a proper government of the railroads in the interest of the people; they fear that such association will lead to abandonment of competition, and to extortionate rates. The catchword "combination" will be used against them.

This is the mistake under which most people labor, and that erroneous view has first to be removed until Government will sanction their associations; not only sanction them, but compel railroads to transact their business with each other upon the plan

proposed. Legitimate competition will enforce its laws under the association as well as without it; it is the senseless, useless war of rates that is to be prevented.

In the free intercourse of all interested railroad companies, each guarding its own interests and the interests of the communities it serves, the principle of competition is necessarily kept alive. Railroad combinations or associations take effect under governmental sanction. As I have proposed, the Government reserves sufficient control to check and prevent every tendency toward monopoly or extortion and unreasonable rates of transportation.

The clearing-house would not force any one road to charge higher rates than it may think it to its interest to do. For example, if the New York Central Railroad should conceive it to its interest to make very low rates on grain to New York in competition with the Erie Canal, the association has no power to force it to adopt higher rates, but simply adjust the rates to the seaboard cities so as to keep them in line with the New York rates, and in a manner satisfactory to the competing rail lines. If this was not done a war of rates would result that would oblige the New York Central to still further reduce its rates, and so on. It is true that under the proposed mode of transacting business the rates would not become so low as they are at present, but they would be low enough. The competition with the Erie Canal secures that result; and, what is more, they would be stable.

In reducing the rates the New York Central is guided by a fixed principle that is in operation all the time, and with about the same force, viz, the competition with the canal.

It makes its rates as low as it thinks necessary for that purpose, and it gives notice to its rival rail lines to adjust theirs satisfactorily to all parties, and thus avoids the wars so destructive to the best interests of railroads and the public. This is the object and mode of operation of the plan proposed. Competition is not prevented or hindered.

It will not be maintained that if the trunk lines were to operate under an association such as that of the Southern Railway and Steamship Association, that the New York Central Railroad would put up its rates on grain so high as to throw all the business upon the Erie Canal, nor would the Pennsylvania or Baltimore and Ohio join in such a suicidal policy. These roads, each of them, want to build up their own trade and the trade of the cities which they serve, and they will arrange their rates, with or without an association, just low enough to secure this result, and that is all that any one can desire. To go lower is a waste of money, benefits no one, and injures many.

If it were not for the Erie Canal or for the lakes and the Saint Lawrence River, or for the Mississippi River, by which the products of the West could be carried to the Atlantic and the Gulf, there would still be another incentive to low rates—the European competition in the grain market. I express it as my firm conviction that if the merchants of Baltimore, Philadelphia, New York, and Boston would show to the respective roads how a reduction of rates would increase the business of the roads, that such reduction was necessary to command the market in Europe, the railroad companies would reduce the rates to actual cost rather than prevent the building up of the trade of these cities.

I know of no instances where in the competitive business between railroad companies similar causes are not in operation that will limit and determine rates of transportation and keep up a healthy competition.

I think the fear that combination will result in monopoly is entirely unfounded. Legitimate competition cannot be excluded, but wasteful wars can be excluded, but this only in the manner proposed by combination.

The people have either to be satisfied with all the evils of the transportation business, of which they have made such bitter complaints, and which they have so unsuccessfully attempted to remedy by State legislation, or they have to establish a judicious government over the railroads, compelling their proper management in the interest of the public without interfering with the legal property-rights of the owners of the road.

This is the object of the plan proposed. As municipal governments are sanctioned by State legislation, and their limits of authority and rights defined, so I propose to establish a government over all the railroads in the country, and this government is to be established in accordance with the institutions of this country.

It is to be a representative and self-government. The Federal Government is to establish the laws according to which the proprietors of the roads are to govern and manage their property, so as to secure its management in the interest of the people; control to be exercised over the railroads only so far as to bring about this result—no farther—and without interfering with their property rights.

The Government has rights, and it is its duty to guard the interests of the people when the owners of the railroads use the property to their injury, the same right as it has to prevent an individual from using his property to the injury of his neighbor's property. No one will deny that. The question is merely, How is this right and duty to be exercised by the Government? How is it to prevent the improper use of the railroad property while it leaves its owners in the full enjoyment of it as long as they

make proper use of it? That is the simple question, the proper answer to which constitutes the solution of what is called the railroad problem.

And this is a practical question which I propose to solve in the manner described by an organized co-operation of the railroad companies under governmental sanction and control.

I am fully aware of the fact that it will be some time before their conviction will take hold of the public mind, and result in practical legislation; but I feel very certain there is no other solution to the problem, and if it is to be solved at all, it is to be solved in the way proposed.

I am strengthened in this conviction by a letter I recently received from Baron Von Weber, who is considered the great railroad authority of Germany, and who has given much attention to the subject under discussion. I sent him some time ago the description of the railroad association which was published in the number of April 7, 1876, of the Railroad Gazette, containing the suggestions to establish railroad government under control of the General Government. He says:

"Your explanation and description of the railroad association was to me of the greatest interest, and I am free to say that I consider your organization a 'master work.'

"I agree with you perfectly that only in the self-control of the individual railroads, in accord with governmental regulations and control, the great problem can be solved which has lately been attempted by the project of the empire purchasing all the railroads in the country. In the mean time the great genius, Prince Bismarck, has studied the question and understood it, and has come to the conclusion that in this direction nothing can be accomplished. I have the satisfaction to know that my writings have done wonders to help to this conclusion. But now when the question is asked, What is next to be done? your communication comes just in time. I propose to work up your plan in the official organ of the German Empire, and hope that it will aid much in clearing up the difficulties in the way of a solution of the problem."

Question 41. Does the association make any allowance in its prorating arrangements for difference in the cost of transportation over the various roads, or if the prorating is upon an equal rate per mile transported?

Answer. In prorating no difference is made on account of difference in cost on the different roads. If this was attempted it would tend to innumerable difficulties. In the first place very few roads know or can know what it costs them to do a certain class of business. The theory is, that each road is entitled to the advantages it may possess in lower cost of transportation, and each road must stand the disadvantages of its line under which it may labor. I do not think it practical to introduce any other system. This one is accepted by all roads in the country.

Question 42. Is the Southern Railway and Steamship Association a body-corporate which can sue and be sued, or, on the other hand, are its mandates merely of binding force as between the various members?

Answer. The Southern Railway and Steamship Association is not a body-corporate. Each member has signed an agreement to do certain things, among others to pay the expenses of the association. This agreement can be legally enforced like any other contract. The members agreed to have this contract in force until January 1, 1877, and for this reason cannot voluntarily withdraw before that time.

Question 43. It is stated in a New Orleans paper that Louisville sells more Louisiana sugar than New Orleans does, and this is attributed to the fact that Louisville sends her commercial travelers who solicit patronage all over the South, whereas New Orleans merchants attempt to plod along in the old way of waiting for merchants to come to town. Will you please give your views upon this subject?

Answer. The statement that Louisville sells more Louisiana sugar than New Orleans, can only refer to the retail trade. New Orleans sends sugar to the wholesale trade to Montgomery, (perhaps Mobile,) Memphis, Nashville, Atlanta, Louisville, Saint Louis, from which cities it is distributed through the country, leaving to New Orleans a very small territory to be supplied in the retail trade. Texas is supplied from Shreveport and Galveston. I have not been able to ascertain what is the extent of the retail trade of New Orleans; you may possibly get that information from your New Orleans correspondent.

I find that Louisville shipped via Louisville and Nashville Road, in 1874-'75, 19,824 barrels and 213 hogsheads of sugar, and received by the Louisville Railroad 6,201 hogsheads, the latter all from New Orleans. A considerable quantity is brought up by river.

New Orleans can sell the Louisiana sugar cheaper than any other market.

A large trade is carried on through the drummers. They visit with their sample trunks every place in the country, and no doubt are facilitating and cheapening trade and commerce. While there always have been these commercial travelers, their operations are no doubt much extended, on account of the traveling facilities furnished them. The sleeping-car enables them to rest at night, and occupy usefully every day. This, however, is only true when long distances are to be overcome. They visit, how-

ever, all country places, and have to move from one to the other, when short distances apart, in day-time.

Question 44. For the purpose of illustration merely, will you please to state about how much greater is the capacity of a double-track railroad than of a single-track road; that is to say, suppose both to be operated to the full limit of its capacity, how much more freight tonnage, all things being equal, could the double-track road carry than the single?

Answer. I consider the ultimate capacity of a double-track railroad only twice that of a single-track road.

It might at first sight appear that it should be more. But when passenger and freight trains are run over the same track, it makes no difference whether the same number of trains are run in one or in both directions upon one of the tracks. The time consumed and risks are the same. The reason that leads us to suppose that the double track gives greater safety and capacity arises from the fact that comparison is generally made between a single track worked to its full capacity (over-crowded perhaps) and a double track to which the same traffic of the over-crowded single track is transferred, which is the case when another track is first built, to relieve the single track.

But comparison is to be made between a double and single track, both worked to their full capacity, and then I believe that the capacity of a double-track road is precisely double that of a single-track road.

I am thus particular in giving my reasons for this view as I have not heard the expression of other railroad managers upon this subject, and do not know their views or reasons therefor, but know that there is a general impression of the greater safety of the double track, but that only can apply when comparison is made between a certain traffic on a single track being transacted upon a double track, or to traffic less than the limit of capacity of a double-track road.

Question 45. What proportion of the entire single-track railroads of the country should you estimate are not employed to more than three-fourths of their full carrying capacity?

Answer. The total train-mileage made on the 7,400 miles of railroad in the United States during the year 1875, was about 315,000,000, or per mile of road per year 4,257, (leaving out of consideration the small proportion of double track, calling it all single track.) Estimating the number of passenger-trains as one-fourth of the total mileage, we have $\frac{3}{4}\frac{1}{3}\frac{0}{6}\frac{3}{5}$=87 freight-trains per day per mile of road as the average of all roads.

I have estimated the ultimate capacity of single-track roads in my answer to question 15 as 54 freight-trains, hence the roads in the country are only taxed to $\frac{8}{5}\frac{7}{4}$=16 per cent. of freight-carrying capacity.

APPENDIX No. 2.

ANSWERS TO INQUIRIES IN RELATION TO COMMERCE BETWEEN THE WESTERN STATES AND THE STATES ON THE ATLANTIC SEABOARD, AND TO THE VARIOUS INTERIOR LINES OF TRANSPORT BY LAKE AND BY RAIL BETWEEN THE WEST AND THE SEABOARD, BY MR. J. D. HAYES, OF DETROIT, MICH. 1876.

Question 1. Please to present an estimate of the percentage of first, second, third, and fourth class tonnage of the east-bound business on the trunk lines extending from Chicago to the seaboard. Also an estimate of the same kind with respect to west-bound traffic, referring to data employed by you in arriving at your estimate.

Answer. The percentage of first, second, third, and fourth class tonnage, east-bound, is about the same each year, unless something extraordinary occurs to change it, such as a very short crop of fruit at the East, while the supply at the West is very large, causing an unusual movement.

	Per cent.
East-bound, first-class, about	.06
East-bound, second-class, about	.05
East-bound, third-class, about	.09
East-bound, fourth-class, about	.80
	100
West-bound, first, (and above that,) about	.36
West-bound, second-class, about	.06
West-bound, third-class, about	.08
West-bound, fourth, and special, about	.50
	100

The above may vary some, but that is about my estimate for the past 9 years. Over the average of roads between Chicago and the seaboard cities, the east-bound would include live stock upon a basis of average fourth-class. Sometimes the rates have been very much above, and sometimes very much below fourth-class, owing to competition.

Express or dispatch goods run—

	Per cent.
First class	.76
Second class	.19
Third class	.03
Fourth class	.02
	100

Question 2. A schedule showing the various fast-freight lines operated on the roads extending from the Western States to the Atlantic seaboard, (including the roads of Canada,) the roads to which the co-operative lines belong, and, as nearly as can be stated, the number of cars employed in each line.

Answer. Schedule of fast-freight lines on New York Central Railroad and its connections:

Red Line, about 4,000, cars, co-operative.
White Line, about 3,000 cars, co-operative.
Blue Line, about 4,000 cars, co-operative.
Merchants' Dispatch, about 2,700 cars, stock-company.
Detroit and Milwaukee, about 800 cars, co-operative.
Saginaw Valley, about 400 cars, co-operative.

International, about 2,000 cars, co-operative.
Hoosac Tunnel, recently formed, co-operative.
Canada Southern, about 2,000 cars, co-operative.
Several oil lines, running from the oil-wells in Pennsylvania and from Enniskillen, Ontario.

On the Erie Railway and connections: Erie and North Shore Line, Commercial Express, Great Western Dispatch, Diamond Line, and several oil-lines.

On the Grand Trunk Railway of Canada are the National Line, and their own through line from Detroit to Portland and Montreal, using in all from 8,000 to 9,000 cars, connecting with the Allan steamships from Montreal in summer, and from Portland from December 1 to about 1st of May.

The Pennsylvania Railroad and Baltimore and Ohio Railroad have the Globe, Empire, Star, Union, Continental, and others, using on all the above lines a total aggregate of not less than 60,000 cars; making a capacity to carry an average of 30,000 tons per day from the West to the seaboard.

Question 3. Please to mention some of the more important characteristics of the traffic in which the several through freight-lines are principally engaged.

Answer. The territory at the West from which each fast-freight line collects its freight, is from nearly all points west of Pittsburgh, Buffalo, and Suspension Bridge. The lines passing over the Grand Trunk, Great Western, Detroit and Milwaukee, and Michigan Central, are considered "northern lines." Those going over the Lake Shore, Erie, and Pennsylvania Railroads are known as "western" and "southwestern" lines; the Baltimore and Ohio being southeastern in direction, but its connections at Baltimore with the steamship lines and coastwise eastern trade make it in reality a strong competitor for the same markets that the other east and west roads are.

Nearly all these lines compete with each other upon the produce of the West in nearly all sections; extreme northern lines controlling the bulk of pine lumber, while the southern lines secure the bulk of cotton going East, north of Chattanooga; the Red and Blue lines taking the bulk of the trade from China and Japan via San Francisco.

Question 4. A statement as to the peculiar work performed by the fast-freight lines and the economic and commercial purposes which they subserve, *i. e.*, the advantages realized by the railroad companies and the public.

Answer. Fast-frieght lines.—The work done by them, when done upon the co-operative plan, is simply to interchange a certain kind of cars painted red, white, blue, or by designating that each connecting line have arranged for a certain number of such cars to be set aside as their allotted quota in such through line. Such quota being considered as their proper proportion according to distance, and the nature of the business to be done, and the time required for doing it. These cars are turned over to a joint agent, or general manager to run them for the joint benefit of all the roads. The mileage of each road's quota being credited to the road for whose account they are running, and the total miles run by line cars over its road is then charged, so that if more miles are made in the lines by its cars than its *pro rata* proportion of the whole according to business, then that road is charged or credited with the difference at the rate of one cent per mile per car to settle mileage balances. Doing business in this manner over several roads, brings it down to *one management* for the benefit of all. For example, a car starts from Chicago to Boston, 20,000 pounds at 50 cents per 100 pounds is $100. The through bill is made for it, and the proportion of each company's earnings is given as follows:

	Miles.	Per cent.	Charges
Michigan Central	284	$27\frac{87}{100}$	$27 87
Great Western Railway	229	$22\frac{47}{100}$	22 47
New York Central	304	$29\frac{80}{100}$	29 80
Boston and Albany	200	$19\frac{86}{100}$	19 86
Total	1,017		100 00

Each company collects from the next its own proportion and the back charges, until the car gets to Boston, where the total is paid by consignee. But in case of an overcharge or undercharge, or loss or damage, then the manager investigates it. If found to be correct, then each company is charged or credited with its share in proportion to the earnings, unless the loss or damage is located on *one* of the roads, then the whole amount is charged to that road. This method saves clerical labor, prevents the delay and cost of unloading and checking out of the goods from one company to the other at each terminal point, and enables the public to do their business with one line *as a whole*, while the four roads forming that whole, save time and labor, yet get their own share of through earnings, just the same as if no through line had been formed.

The general freight agents of the roads forming such a line meet once a month to audit the managers' vouchers. They accept or reject them as they deem proper for their own roads, but generally they agree, so that no difficulty grows out of settling

the accounts. Line cars sent to local stations to load off the main line, are billed "local" to a line station, and their charges paid and put upon the line way-bill as "back charges." This enables the road that loads a line car and runs it ten miles, to deliver its contents to the line without the cost of transfer, by paying 10 cents each way for mileage upon the line car, at the same time saves the receiving road the expense of loading, weighing, checking, and delay of cars at the receiving-line station.

Question 5. During the period of demoralization and depression of through rates, which followed the failure of the Saratoga compact, was there any advance made in local charges, or did such rates remain stationary, or fall?

Answer. The "local rates" were not changed in consequence of the Saratoga compact at its commencement or at its failure.

Question 6. A copy of the Saratoga compact of August, 1874, with a statement of the causes which led the trunk-lines to enter into such alliance, the practical workings of the same, the causes which led to its abandonment, and the results which followed.

Answer. Copy of the Saratoga compact, marked No. 1, is sent herewith.

The trunk lines supposed, by their Saratoga agreement to leave the making of rates to the commissioners having no interest in the roads, that they would satisfy the public and harmonize conflicting interests among the roads.

The causes which led to the abandonment of this compact were very numerous, and which were pointed out to some of the railway officials on the day the agreement was made at Saratoga, 30th July, 1874. The Grand Trunk and Vermont Central form a line from Boston to Detroit of themselves. They claim truly that they cannot get a fair share of business from Boston at the same rates that the more direct fast-freight lines get via the Boston and Albany Road. Therefore they must accept less rates. Their connections at Detroit may refuse to accept a *pro rata* of the rate made by them. But their line being so long, they have the choice to pay the difference out of their share of the earnings, or, during the season of navigation, to *insure* on the lake and deliver the goods at Milwaukee for the Northwest, and at Chicago for the West and Southwest by their own line of steamers from Sarnia. In that way they secure more money than to ship by rail all the way and pay the *pro rata* proportion west of their own line of any arbitrary rate made by commission; therefore being independent, and having two direct rail-connections from here, they can and do make such rates out of Boston and Portland to the West as secure to them a share of the business. Their situation is such that they could not in justice to themselves become parties to the Saratoga compact without first securing for themselves an agreed discrimination in rates, which the Boston and Albany Railroad would not allow. They claimed to be the *short* direct line out of Boston having thousands of empty cars running west, therefore could and would carry freight as cheap as other lines. If the New York Central refuse to accept their proportion of the rate from Boston, then the Boston and Albany Road, being only 200 miles long, might have to carry the goods over its road for nothing, besides, in some cases, paying something more for the privilege of maintaining a foothold in Boston. Therefore the balance of the line must in fairness carry the goods at their share of the price necessary to secure them or lose the business entirely. Such being the case no commissioner could make a rate for the Grand Trunk or the Vermont Central; neither for the Baltimore and Ohio Roads, the latter taking goods by water to Baltimore, insuring them, which is equal in effect to "all rail;" consequently, as soon as either of these roads agreed to the commissioners' rates, their business would be gone. They claim the right, and have the power, to make rates for themselves, and unless the Boston and Albany with their connections meet it, they surrender their business into the hands of their rivals.

The same thing occurs at New York with the Baltimore and Ohio Road as against the trunk lines. Then, again, when such a compact is formed among railroads it cannot wipe out the contracts then in force. Each company out of New York agreeing to submit its contracts at some future time, I am inclined to think some bad faith has been practiced in securing or renewing contracts with their choice customers. So that the effect of such an agreement has been virtually destroyed by the contracts in force having a long time to run at lower rates than the commissioners' rates would warrant. The vast number of empty cars running west is also a great temptation to give some considerations for business that might be entirely beyond the power of the commissioners to deal with, there being no penalty for violation of commissioners' orders when they conflict with the roads' interests. The east-bound business was also to some extent beyond the power of the commissioners to deal with. They could not deal with the rates on the lakes, canals, and rivers, nor upon the ocean, all of which go to influence the business and the rates upon the rail proportion of such through-business. Water-rates on grain from Chicago to New York, via lake and canal, have their influence upon all that portion of country tributary to them; therefore, while the New York Central and Erie Railroads may have no interest whatever upon lake, yet they have a direct interest in working in harmony with lake rates, as against the Erie Canal from Buffalo to New York. While the Grand Trunk works in harmony with lake from Sarnia at one end and the Montreal line of steamships at the other, as against the lakes

and Saint Lawrence Canal, Baltimore works its short line to the seaboard in connection with its lines of coastwise and foreign steamers. Philadelphia does the same thing with its lines of steamers. New York and Boston have to compete; therefore the rate from Chicago to Liverpool, Glasgow, London, or Bremen may be equal by all lines through, yet the ocean and lake proportion may change the rate per ton per mile received by the railroad proportion very much indeed. If the rail was required to keep a uniform rate per ton per mile the short lines would get all the foreign business, ocean-rates being equal. Take cotton from Memphis: the White Line being in the compact, bringing large quantities of compressed cotton via Louisville to New York, must compete with the river to Saint Louis, Cairo, Evansville, Cincinnati, and Pittsburgh on the north, and via New Orleans, Charleston, Norfolk, and Wilmington on the south, none of which were bound by or were parties to the compact. The same is true of the foreign tobacco shipments from Louisville, Kentucky. Therefore the commissioners found the same difficulty in their work that the railroads described, viz, circumstances over which they had no control, peculiar in themselves, together with the never-failing rule of supply and demand, made rates independent of the power of the commissioners, and while the public supposed the commissioners were doing good, the final results proved that they were powerless against lines not in the combination, which rendered those that were in obliged to abandon a scheme that could not be worked unless all were interested and that should have had a large money consideration pledged as a forfeiture, and an act of Congress regulating traffic between the States, which would give power to carry out an agreement among railroads. Even in that case the commissioners might be appointed by Government and made responsible to the Government under the form of a clearing-house system, which can be made to adapt itself to all competing lines both by rail and water for the general good of the public as well as for the transportation lines themselves.

Question 7. Some facts in regard to constructive mileage agreements?

Answer. Special rates are made necessary where they conflict with the through-rate. For example: From Albion to Detroit, 96 miles, the local rate is 12 cents per 100 pounds upon such property as is required in Detroit—pays that sum; but if the same property is sent on a through-rate to Boston, as competing with South Shore Road, at 50 cents per 100 pounds, then the same road will get only $8\frac{19}{100}$ cents for a prorate upon a *constructive mileage* of 158 miles, to equal the longer distance via South Shore Road, while the real distance is but 96 miles, and the Great Western Road would get $12\frac{83}{100}$ per cent. for 229 miles. Such special difference between "through" and "local" from competing points affects all the local stations near a through station, while neither will change from "local" upon property that is wanted for the Detroit market. The same thing is true of nearly all classes of business upon all roads, which would make the local tariff unreliable. For example: tobacco is bought largely in Louisville for Detroit manufacturing. The rate to Detroit is not anything like in proportion to the through Liverpool rate, or even New York rate per ton per mile, yet both have passed over the entire length of the same roads. The one is a *necessity* to come here, while the other has to compete with the direct and other lines to reach its Liverpool destination, and could not be carried this way at all, at the same rate per ton per mile paid by Detroit manufacturers.

Question 8. In view of all the competitive elements which exist, is it your opinion that the unrestricted action of the laws of trade are sufficient to prevent the long continuance of any exorbitant and unjust freight-charges imposed by the trunk-lines between the East and the West?

Answer. Competition will keep the rates below an average paying rate until the traffic is very much larger than it is now or is likely to be for some years to come. The great fear now is that such a competition will be kept up as to render the stock, and in some instances the bonds of those roads, of no value to their owners.

Question 9. Such facts as you may be able to present in regard to the growth of north and south traffic in the States of Indiana and Ohio, and especially as to the commerce over the north and south roads in these States, between the States north of the Ohio River and the States south of the Ohio River?

Answer. The trade upon roads running north and south in the States of Indiana and Ohio have in reality no growth of any amount. Some lumber and other property moves south, while we get a large quantity of provisions, lard, tobacco, cotton, &c., from the South; but the bulk of it is for local manufacturing or on its way to steamers for Liverpool, which, I think, is not much more now than it was fifteen years ago. The bridge at Louisville has given a much larger apparent traffic at that point, but nearly all of it is east and west business crossing at that point.

Question 10. The condition under which the following through-lines to the West are maintained: 1st, the Grand Trunk and Detroit and Milwaukee; 2d, the Grand Trunk and Michigan Central; 3d, the Vermont Central and Grand Trunk and Michigan Central; 4th, the Boston and Albany and New York Central and Michigan Southern; 5th, the New York Central, Great Western, and Michigan Central; 6th, New York Central,

Canada Southern, and Michigan Southern; and any other combinations which form what are known as through-lines.

Answer. The conditions by which all through-lines should be maintained is a *pro rata* per mile carried when the rates are being maintained. But when any line makes a "cut" or pays rebates, the connecting-line may refuse to participate and charge its full share of the current rate. They may go further, and refuse to pay back charges or to collect them from consignees. But such measures are seldom taken, except in extreme cases; where the road in fault is not in a position to go around its dictator, it must yield or accept these disadvantages. Local rates may be attempted, but as common carriers I doubt whether it could be maintained in any court. *All* the roads mentioned are governed in a similar way.

Question 11. Are not many railroad managers coming to the conclusion that the future prosperity of their roads depends more upon the development of local than of through business?

Answer. Some of the trunk-lines from Chicago to the seaboard derive a large share of freight-earnings from local traffic, such as Michigan Central, Great Western, New York Central, and others, while the Erie, Canada Southern, and some others depend almost entirely upon the through-business both in passenger and freight. Railroad managers cannot develop a local traffic except by inducing manufacturing establishments to locate on their roads. Lumber-manufacturing must generally be done where the timber grows along the lines of roads. But where the logs can be floated in a river to a competing point or to water-transportation it is done. The surplus produce of the land *must* move from its place of growth by such means as is provided for it. Therefore "local" is charged when such station's rates are not affected by through-competition. Everything else being equal, no manufacturing of any magnitude will locate at a local point without first making a special contract for its freighting business with the road upon which it proposes to locate. This done it remains no longer a local trade under its proper meaning, or under that road's regular tariff for that station. Such a development of business would be "special"—"local" in its nature, but "through" or competing in effect upon earnings.

Question 12. Does not any prorating arrangements upon a mileage basis, as between roads east of Chicago and roads west of Chicago, operate very much against the western roads, from the fact that the cost of transport on the western roads is much greater than on the eastern roads?

Answer. No. It costs no more to haul ten tons or a car-load upon a western road than it does upon an eastern road; except it be that the interest of the cost of the road, cost of maintenance of roads, &c., is spread over a far *less* number of tons per mile. This is balanced by the *less* cost of road, and the very expensive terminal facilities that the eastern roads have to provide in the large cities, their increased taxation, switching, sorting out cars for delivery, the guaranteeing, collecting, and paying total back charges from the starting-point, settling overcharges, loss, and damages with consignees; the bridge-toll over the Mississippi and Missouri Rivers being deducted from the total charges *before* prorating, while the bridge-tolls at Albany and the delivery of property in New York harbor by barge is all paid by the New York Central and Hudson River Railroads out of their share of earnings, simply getting a small allowance of mileage equal to about two miles. Oftentimes they take the freight six or eight miles in barges, at a cost of about 80 cents per ton.

The car-mileage would generally be in favor of western roads, and at times very much against the interest of a long line, having rolling-stock enough for its own share of the total business; for example: The Baltimore and Ohio Roads are complete of themselves to Chicago; therefore they could not afford to become parties to a co-operative line beyond them, on account of car-mileage balances; their haul would always be *long*, while the connecting lines at Chicago would be generally comparatively *short* and local. For instance, a Baltimore and Ohio car might take one day to go to a local station 10 miles distant to load, be another day loading, and another day to be brought back and delivered to the Baltimore and Ohio Company at Chicago, earning 20 cents mileage in *three days*. During the same time three of the same western company's cars might make 300 each in one day on the Baltimore and Ohio Railroad, equal to $9 against 20 cents. The local road getting full local rates and a mileage balance *on time* basis of $8.80, while the Baltimore and Ohio Road may have had hundreds of its own cars standing idle upon its own side-tracks. Therefore such a line would prefer to transfer at Chicago and run its own line complete from there East.

Western roads that contribute to the lake traffic may make a *loss* by the difference between it and Chicago, and its *pro rata* in through lines. Take "local" rate from

Burlington, Iowa, to Chicago at 12 cents per 100 pounds for 20,000 pounds	$24 00
Elevating charges at Chicago, 333 bushels	3 33
Per car	27 33
Pro rata on through to New York, 17 $\frac{1}{100}$ of 50 cents is	8 85
Difference in favor of Chicago	18 48

Yet there are so many roads that connect at Burlington, Iowa, that have no *lake* connection, that *they* will prorate the entire distance. Therefore the roads east of Chicago cannot pay the arbitrary to Chicago out of the total through rate and take what would be left east of Chicago, consequently such a road *must work against its own interest* to work for an all-rail business as against its lake connection. On the other hand, Milwaukee is a "common point" by water with Chicago, and the rates are the same by rail. But as no eastern road can get business "all rail" except via Chicago, the prorate of a Chicago rate must be taken from Milwaukee, making all lines east of Chicago pay their proportion of hauling from Milwaukee to Chicago. New York Central and Erie taking their share, had the same freight gone from Milwaukee to Buffalo by water, they might have received 30 or 40 per cent. more for hauling it over their roads. The same thing may occur on *cotton* from Memphis, or *tobacco* from Louisville, being delivered by river at Cincinnati or Pittsburgh, to the Baltimore and Ohio or Pennsylvania Roads. It is the peculiar situation of the business, over which the eastern or western roads have no control, but must adapt themselves to the business.

Question 13. Please to describe in general terms the geographical limits of the territory in the Atlantic States tributary to each of the trunk-lines.

Answer. The geographical limits of territory in the Atlantic States tributary to the trunk-lines, are about as follows, viz: The Grand Trunk, passing from Detroit through Canada by its main line, crossing the Saint Lawrence River on the Victoria bridge, comes into the extreme northern part of Vermont, supplies the State of Maine, the northern part of New Hampshire; then, by its connection with the Vermont Central and its connections, takes in Vermont, Southern New Hampshire, Massachusetts, Rhode Island, and Connecticut; then, from its connections with the New York Central and Erie Roads at Buffalo, N. Y., they reach *all* the Eastern States. Their cars pass over nearly all the roads west and south of Detroit as far as the Ohio River, and west as far as any other lines.

The New York Central and its connections reach all the Eastern States except Maine and the northern part of Vermont and New Hampshire. They also reach Philadelphia, Scranton, &c., and Central New York.

The Erie Road reaches a part of New York State, Pennsylvania, (northern part,) New Jersey, and some points on the west bank of the Hudson River, New York City, and by boat connections all the *coast* cities as far north as Portland, in Maine.

The Pennsylvania Railroad and connections reach Pennsylvania, New Jersey, New York City, and by boat connections all the *coast* cities of New England; but gives its influence more particularly to Philadelphia through business.

The Baltimore and Ohio Road's specialty is for Baltimore, through and by boat connections for New York and the *coast* cities of New England. All of these trunk-lines compete for the business of the principal towns and cities of the Atlantic States that can be reached by rail or boat connection except such interior towns where one road can do the business at the proportion of the through rate, and the others would be subject to "local" rates to reach the same points.

Question 14. Please to state what policy you think should be pursued by each of the trunk-lines for the maintenance of its proper share of the traffic between the East and the West.

Answer. "The policy that the trunk-lines should pursue to maintain their share of the traffic between the East and the West." This question is what those lines have been trying to settle among themselves since their commencement, and are no nearer it now than when they first commenced.

I doubt very much whether any different state of things will occur until the trunk-lines and their immediate connections to and from the principal cities will agree upon the "clearing-house" plan, similar to that in favor now and for twenty-five years past in England. The clearing-house managers to be persons having no financial interest in any road or line, but shall have charge of all rates, both for freight and passengers, to and from all competing points, agreeing to allow Grand Trunk and Baltimore and Ohio a fair percentage of difference equal to their actual disadvantages. Then having all through-tickets and bills of lading issued by the clearing-house, and all agents subject to the clearing-house rules and regulations, and responsible to the clearing-house board. Then have the clearing-house board authorized by an act of Congress to enforce upon the roads its rules and liable for its expenses in *pro rata* proportion to the business done over each road that shall become a member of the clearing-house. That no road not a member of the clearing-house shall be permitted to issue through-tickets or bills of lading over any road that is a member. That the local and special business of each separate road may be conducted by themselves individually. But upon all through or competing business, where two or more roads are interested to and from competing points, it shall be under the supervision of the clearing-house, or else be done by each as "local" to end of its road, where another ticket and rechecking of baggage and the rebilling and checking of freight and actual transfer from car to car may be insisted upon. Such clearing-house board to point out what they consider legitimate territory for each trunk-line

to occupy, and have such departments in the clearing-house as "Grand Trunk," "New York Central, South-Shore," "New York Central, North-Shore," "Erie, North and South Shores," "Pennsylvania," "Baltimore and Ohio" departments. Allowing the public to take their choice at an even rate, making every agent neutral under penalty of immediate dismissal and perhaps a money forfeiture besides, if convicted of partiality, or of undue influence for either route. This would make all agents joint ones for all roads or lines, subject to the board of clearing-house managers, and they subject to the railroad managers for their dismissal or censure in case any complaint from the manager of any road is sustained at any quarterly meeting of managers. Twenty days' notice being given of the complaint to the managers and to the person complained of, showing the nature of the grievances to be submitted.

This would secure uniform rates to all customers and reduce the expenses very much and produce better results at less cost of transportation than at present. All the settlements of each company's proportion would be direct with the freight auditor of each road, who would receive a copy of each way-bill in which that road would be intrusted and charge the clearing-house with its proportion and credit it with its certificate of balances due from other roads. For example, a car starts from Chicago to New York, the total charge to collect being $100, all of which would be collected by New York Central. The clearing-house would charge New York Central with $100, and credit Michigan Central $29 49
Great Western of Canada 23 78
New York Central and Hudson River Railroad 46 73

Total 100 00

Each company gets a tissue copy of such way-bill. At the end of the week each company may have collected enough to balance its own earnings in the line. If not, a clearing-house certificate on the debtor road would be issued to the road for its balance. This system would do away with all rebilling and clerical labor at terminal points, facilitate the prompt movement of property under a joint management of all through business upon all roads for the good of the whole community, and very largely to the benefit of all roads participating. The ticket business would be settled in a similar way with each road's general ticket-agent.

Question 15. Does not transportation on the lakes and on the Erie Canal to a very great extent regulate the charges on railroads during the season of navigation?

Answer. Lake and Erie Canal transportation of fourth-class freight may in some sense control charges by railroads during the season of navigation, and sometimes long after navigation has closed. And in another sense it does not materially affect rates at any time of the year. To explain, I will say lake and canal rates for 1875 from Chicago to New York have been on wheat equal to about 25 cents per 100 pounds, including rates, insurance, elevating, and shipping charges. But only such points as were tributary to Chicago and could pay a fair local rate added to the lake and canal rate, could get the benefit of both combined as against rail from such interior towns. Therefore, the competition would in reality be transferred from lake ports to the place of production, upon all property bought at the place of growth for consumption at the East, while the surplus seeking a market at Chicago or lake port towns, would all have to pay "local" to such town, with elevating charges, storage, inspection, commission, shipping charges, insurance, interest, &c., as against the through all-rail from such interior town to the place of consumption. Should that place of consumption be an interior town in New England, or off the line of the canal, the lake shipments would meet another "local" rail rate, storage, insurance, interest, &c. Again, for a boat-load at a time, instead of daily receipts by cars as required for the business from day to day. Lake and canal, therefore, is not a criterion for rates from the interior places of production to the interior place of consumption, until such rates are so low from lake ports to New York, as will pay both "local" and all other charges and then show a profit over "all-rail" rate direct from producer to consumer. But upon large quantities shipped from store in Chicago to meet a market in New York direct, during the season of low lake and canal rates the rail cannot be expected to compete. Whenever the navigation closes, with a very large surplus of such property in store at New York, or seaport cities, with a dull market from abroad, the effect is to keep rail-rates low, long after navigation is closed, or until the stock on hand East is reduced, or the price goes up to warrant the movement of what is in store at the West to the East. Take for example the state of things at the close of navigation on the 4th December, 1875:

The distribution of grain in store.

Places.	Wheat.	Corn.	Oats.	Barley.	Rye.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
New York, (stores)	5, 878, 036	816, 962	1, 252, 005	305, 961	99, 909
Buffalo, N. Y	2, 252, 359	282, 612	269, 562	156, 559	27, 190
Albany, N. Y	.....	4, 500	38, 000	258, 000	15, 000
Oswego, N. Y	490, 000	125, 000	55, 000	250, 000	10, 000
Boston, Mass	1, 453	79, 300	284, 930	72, 141	493
Toronto, Ontario	288, 154	500	5, 600	65, 970	2, 540
Philadelphia, Pa	300, 000	275, 000	110, 000	65, 000	13, 600
Baltimore	7, 500	90, 935	70, 000	22, 500	1, 500
In transit East	1, 949, 361	1, 032, 364	552, 361	400, 373	35, 815
Total east of Buffalo	11, 166, 863	2, 707, 173	2, 637, 458	1, 596, 504	206, 246
Total at all points	16, 464, 258	3, 436, 233	3, 531, 712	2, 255, 239	462, 290
In store west of Buffalo	5, 297, 395	729, 060	894, 254	658, 735	256, 044

It will be seen from the above that the supply of wheat in store and in transit at Buffalo and east is unusually large, in anticipation of a foreign demand. But taking the total exports from New York, Boston, Philadelphia, and Baltimore for one month, ending December 8, is wheat 2,001,534 bushels, corn 415,345 bushels. Therefore, at the same rate of export, there is wheat and corn enough for export for five months now at Buffalo and east of there; consequently what is wanted for home consumption in the interior will go by rail direct from the interior producer in the West to consumer in the East. That can be done without taxing the capacity of the roads. Neither can the roads get high rates with such a supply on hand of wheat. While the corn supply is small east, the rail can and will carry large quantities of that kind of grain. The effect of an advance of prices on rail rates would not move wheat, but would give the eastern holders an advance in price, or decrease the price of what is in the West, without any benefit whatever to the roads upon that one kind of grain. Therefore, under such circumstances, the roads cannot afford to lose its rate upon what must move, neither can they get a high rate, in the face of the quantity to move, outside of what is now East, consequently the "lake and canal" will, to some extent, control rail rates this winter, as well as during the season of navigation, from lake ports to the seaboard, which must also govern, to some extent, the rates to all other points. The supply and demand may, under such a state of things, make "all rail" from some interior towns as low as the "local" and "lake and rail" combined from the same points. Pork, beef, lard, &c., are not affected by lake rates.

Question 16. Do not the Erie Railway and the New York Central Railroad enjoy very decided advantage over the trunk lines in the transportation of grain to New York for exportation, from the fact that they connect with steamer lines on the lakes at Buffalo?

Answer. Yes. Erie and New York Central enjoy advantages over other trunk lines by their connection with lake transportation. Grain instore at Buffalo stands the first chance for movement in case of need to meet a demand. Those roads can move it at better rates than the *pro rata* of the extreme western shipments by rail.

Question 17. What are the chief commercial considerations which have determined the various classifications of freights, including that class commonly known as "special"?

Answer. The commercial considerations which govern the classifications of freights from the highest, "four times first class," down to "special," are principally the nature, value, and risk incurred in transportation. Thus "plate glass too large to load in box-cars, (owner's risk,) released, four times first class," may seem to be extortionate. But a merchant requires a store-front of plate glass. That may weigh, say, 4,000 pounds. It must be set upon its edge upon a platform-car, secured by strong braces from each side. Carpenter-work and material will cost $5. Nothing else is required to go upon such a car at that time. See net results:

4,000 lbs., at 75 cents, New York to Chicago		$120 00
Less cost of fixing the car	$5 00	
Car-mileage on car	9 61	
		14 61
For running a car 961 miles		105 39

With all the risk of carelessness of unloading, loading, and running. "Owner's risk," only means "ordinary usage." Again, a case of silk, weighing only 100 pounds, costing $1,000, may be stolen or burnt, involving the payment of $1,000, while the com-

pany's charges on it would be but 75 cents. A bale of fine broadcloth may be damaged by leakage of oil. Then again some articles, such as hats, bird-cages, bed-springs, buggies, &c., are so light and bulky that but a part of a car-load in weight can be put into a car. Their liability to damage is very great, while the "specials" are generally low-priced, heavy goods, not very liable to loss or damage. They are also moved in large quantities, entering into the daily use or consumption of nearly all classes of people. Therefore the classification is made with a view to cover the requirements of the people, and yet with a degree of justice and fairness between the carrier and the public.

Question 18. Such facts as you may be able to state in relation to railroad consolidations in this country, and the commercial and economic considerations which have led to such consolidations.

Answer. Consolidations of railroads have, in some cases, proved wise, and in some cases otherwise. Originally there were about twelve companies managing what is now known as the New York Central and Hudson River Railroad Company, all having about the same interest, except the branch from Niagara Falls to Rochester, N. Y., competing against the branch from Buffalo to Rochester, for such freight as could be reached by both. Therefore those lines west of Albany were greatly benefited by consolidation into the New York Central. This left the Hudson River Railroad to compete with the river during the summer months, while in winter it had to assume the great responsibility of delivery, collection of charges, cost of both the loading and unloading upon very costly ground, and great expense for a short haul of 150 miles. Therefore, as a part of a consolidated line, it would be greatly benefited, and upon the whole season's business the entire line gains. The same may be said of Western, and Boston and Worcester, now the Boston and Albany. The Boston and Albany Road would be still further benefited were it to consolidate with New York Central and Hudson River Railroad, to prevent the turning of business from them at Schenectady, Troy, and Albany. But the other roads, and perhaps the public, might gain nothing. The Pennsylvania Road would gain by consolidation or gaining control of management of roads in a direct line or connection with large competing points, in order to cut off the possibility of such roads forming other connections for diverting legitimate traffic. But the great danger is, and has been, the taking on of side lines under "special" contracts for managers to float the securities and build the roads, from which certain interested parties might make large sums of money for themselves, as parties in construction companies, the guaranteeing of the bonds or lease to the main line being the only means by which the money could be raised, and the main line lose money by operating the road without securing any more traffic than it would have got had the road been built and operated by the original company. The guarantees and leased lines of the Pennsylvania Company having so far made an apparent loss, time alone can tell whether the increased traffic will more than cover increased competition and cost of renewals and maintenance. I have doubts as to the gain to the individual stockholders of main lines in continuing such consolidations, guarantees, and leases, in the manner and to the extent it has been done within the last few years. Such a continuance would, in my opinion, bankrupt the trunk lines giving them.

Question 19. Facts going to show the advantages and disadvantages which have resulted to the public from the consolidation of railroads in the United States.

Answer. When consolidations are properly made, the public get the benefit of dealing with one corporation instead of two or more. This would be also covered by the present system of co-operative lines instead of consolidation, while at the same time it compels the public along such a line to ship over the main line or pay full local rate to where it might cross another road that would answer the shipper's purpose better. If the agents have not power to correct an abuse, the shipper must go or send to the general office for redress, where his complaint is not fully understood or appreciated; consequently little or no notice is taken of it and the abuse continues. Those who are more influential may get a hearing and special rates, and the effect of such special favor may entirely ruin the other man's business at a point where the public and the road both would have been largely benefited if they had understood the nature and effect of the business. One illustration will suffice: Michigan black walnut was cut into shape for chairs, shipped in the rough as lumber. At Boston it would be made up into chairs and boxed up ready for putting together and shipment back to Chicago as "Knock-down furniture boxed," second-class freight, which would go from Boston to Chicago for 35 cents per 100 pounds, paying the roads from here to Chicago little or nothing, while "chairs" from Detroit factory would be charged "three times first-class local rates," with hundreds of cars running empty. Therefore Michigan wood went to Boston and back to Chicago, and shut out the business of Michigan manufactories west of Chicago. The first year of a fair rate on chairs enabled one Detroit factory to sell $30,000 worth of chairs west of Chicago, paying the road that carried them ten times as much as they got out of their share of the Boston chairs. Another case: The roads had no faith in transporting fresh beef in properly constructed cars for that purpose, and therefore would not build the cars. Others built the cars and stood firm

in the faith of their success until now one line carries about 15,000 tons per year of fresh meat, game, perishable fruits, &c., from Chicago to Boston and New York, paying the roads an average of about $15 per ton.

Question 20. Please present such facts as will tend to illustrate the advantages of combinations or agreements between railroads of the following character, viz: (A) Agreements as to uniform classifications. (B) Uniform rates between competing points. (C) Exchange of traffic. (D) Co-operative fast-freight lines. (E) Prorating. (F) Pooling of earnings. (G) Through billing. (H) The carriage of grain in bulk. (I) Payment of a common mileage-rate for the use of cars of other roads. (K) Running arrangements between roads forming through lines. You can also consider in this connection any other reciprocal arrangements which have sprung up between roads.

Answer. The economy and necessity of the agreements upon certain matters between railroad companies will become quite clear, when the common interest shows them to be the means of doing the business under them to be a necessity for them all alike.

(A) Uniform classification affects all alike, and whenever a deviation is made creates confusion, and is productive of overcharges. For example, "leather in rolls or boxes, second class," being the general agreement; but Buffalo manufacturers make a specialty of sole-leather, which they ship in large quantities; therefore upon nearly all classifications from Buffalo that is rated "third class," and in most cases an overcharge is claimed when the property reaches its destination if going beyond the immediate roads going out of Buffalo, causing great trouble and confusion, and sometimes months before the delivering road can get their accounts adjusted.

(B) Uniform freight tariffs, or the maintenance of common rates between competing points, are for the purpose of giving the public a choice of routes at the same price. If one road charged less than the other, it would get all the business if everything else was equal. That would induce the other to come down in price. That is and will be the trouble at Boston until some arrangement is made allowing "Grand Trunk" and "Baltimore and Ohio" an agreed difference in proportion to their disadvantages. Again, persons living at New Haven, Conn., may choose between the "canal road" from Westfield or the New Haven road via Springfield at the same rate, in many cases. There, the "canal road" runs in the rear of the warehouses of consignees, delivering property direct from the car to the store without exposure or cost of carting. Therefore the Springfield road cannot do the business for those firms. It would be folly for them to reduce rates to their own legitimate customers in hopes of gaining the other road's business. Therefore they agree to maintain rates, letting the public choose the route. The same thing applies to all competing routes, so far as rates are concerned. It is the bad faith in "cutting," paying drawbacks, changing classifications when it can be done without detection, that produces railroad wars. One road may secure a large shipment of cigars in boxes, (large cases containing cigars in small boxes,) at "four times first class," and "cut the rate" by agreeing to bill them as "merchandise, first class;" the delivery agent being understood to wink at it in case he discovers the cheat, or the agents at both ends may be "smokers," which accounts for their not knowing the contents of those "merchandise" cases, until a rival line investigates it and charges "bad faith," "cut rates," &c. Or "silver-ware," very valuable, not carried as freight by any road, is billed as "hardware," which is stolen, and the road is obliged to pay for it, owing to its want of care through the neglect of the agent not knowing the contents of the case. Many such instances of bad faith to secure business against rival lines are practiced, which the clearing-house system would correct at once.

(C) "Exchange of traffic" is confined to such goods as may be "unconsigned." For example, goods from New York marked "Red Line," would consign them through to destination over the roads, parties to the Red Line; but goods unconsigned for Chicago, via Great Western Road, would be given to the Michigan Central instead of the Lake Shore, because it is not the interest of the Lake Shore to exchange and give the Great Western Railway any east-bound business; consequently, "exchange of traffic" is virtually nothing more than delivering unconsigned business to their best connecting lines.

(D) "Co-operative fast-freight lines," is answered in my reply to No. 4.

(E) "Prorating" is simply taking each company's share per ton per mile hauled. But if any one company has disadvantages which the other has not, then a fair consideration may be agreed upon as "terminal charge" and paid by the line, and prorated as expenses, or they may agree upon "constructive mileage" sufficient to cover the difference; such as "East Boston, via Junction Railroad," where the actual distance from the junction is 7 miles. But the trains go to Boston; there the property for East Boston has to be switched out and a special train made up to go back and around the city for East Boston; therefore, they are allowed 23 miles, prorating distance, instead of 7, actual distance from the junction.

(F) "Poolings of earnings" is where two or more roads having an equal amount of business between competing points, or an agreed basis of percentage of business from those points, agree to "pool earnings;" then each do all that is given them without regard to solicitation, all keeping regular rates, total earnings of each being reported.

The road doing more than its share of the agreed basis of the "pool," shall get the agreed *cost* of doing the extra amount, the profits being divided with the roads in the pool. This system is also subject to bad faith, and so far has not been very successful.

(G) Through billing is fully answered in Nos. 4 and 15.

(H) "Carriage of grain in bulk" is simply to spout a given amount into a car properly secured for the purpose. But the question of the railroad company's liability to deliver the same quantity is a vexed one, causing great dissatisfaction both to shippers and the railroad companies. Grain, particularly corn, may be loaded at some private warehouse in the West and shipped to some local station at the East, where there are no facilities for weighing, and billed as 350 bushels, when in reality there is 450 bushels. Unless the overweight is detected in transit, the roads are swindled out of the charges on one hundred bushels, which enables the shipper to undersell an honest dealer or one who buys grain from an elevator. Eight car-loads have been billed in five cars as only *five* car-loads. Then, on the other hand, cars are very frequently loaded at elevators not owned nor controlled by the railroad company and delivered to another in the East. The one loading the cars will take good care not to give extra weight, and at the other end the receiving one will take liberal weight, so as not to be liable for shrinkage in his hands. So that between the two ends the grain shows a "shortage," when the railroad company may not have lost a pound in transit. Necessity compels the railroads in such cases to give receipts in a guarded manner, such as "a car-load," without quantity, or by adding "said to weigh," or "elevator weights," or "weight not guaranteed," all of which is unsatisfactory to both shipper and receiver. The receiver, or consignee, advancing money upon the drafts of a weak shipper may suffer loss. It also opens the door to carelessness and perhaps fraud on the part of the railroads, for which they concede no liability under the form of contract given. Perhaps some weak shipper on a short road gives a bill of lading for fifty bushels more than the car contained, on which the money is paid. It would be a very great hardship on the delivery-road to pay for such shortage and try to collect from some bankrupt road in the West where the agent giving the receipt may have had an interest in the shipment. But where a co-operative line weighs the grain to go East, where the agent of a road, party to the line, can or should deliver by weight, there should be no question whatever about the liability to receipt for and to deliver the quantity receipted for, or make good the deficiency, they retaining all *over* the specified quantity, the same as a vessel on the lakes, or a canal-boat on the canal. At Chicago special bills of lading are sometimes given from elevators to an elevator of the railroad, East, guaranteeing quantity less one per cent. for shrinkage. As managed at present it is somewhat unsatisfactory for all parties. Yet, under the circumstances, a clear way out of these difficulties does not present itself until a uniform system shall be made obligatory by act of Congress to "regulate commerce between the States."

Interchange of cars is necessary among roads having a common or connecting interest. Therefore when one company's cars run more miles in that common interest, it should be paid the difference in money. So, by common consent, mileage *balances* are made up once a month and settled for at a uniform rate per mile for such balances. It makes but little difference where the number of miles run is about a *pro rata* proportion run by each company's cars, as the one balances the other, the money part being only for what is run *over* the *pro rata* proportion.

Running arrangements between roads are the usual *pro rata* basis, where each company does its own share of the business, or pays mileage balances, or rental for rolling-stock, or where one company is situated so as to furnish traffic, but can arrange with connecting line to run their road and manage its details for a percentage of the net earnings, same as those roads that are controlled by the Pennsylvania Company, where they control and operate a road for the benefit of both, paying over *net* earnings over actual expenses for the privilege of controlling the road for the benefit of the main line. Such running arrangements are governed by the circumstances presented in each individual case, and are subjects of special contract, any disagreements being settled by arbitration or through the courts, where facts are supposed to form the basis of an equitable settlement.

Question 21. Please to state to what extent there has been a change in the mode of commerce by the direct shipment of produce from interior points at the West to interior points at the East.

Answer. The change in the manner of doing business by cars from Chicago and the Southwest is about this: Grain in store in Chicago sold subject to storage, switching, inspection, trimming, &c., equal in all to about 2½ cents per bushel. Chicago quotations for corn, 50 cents, means 52½ cents in the cars. Therefore, if the sale is made "free on board" at 52½ cents, the cars may be sent to the place of production and run through, paying the rate west of Chicago, thus avoiding the 2½-cent charges in the country. A dealer that is well up to the business will claim the additional price, or divide with his commission-man at Chicago who sells for his account. The quoted price for grain at the different points is based upon the custom of charges in force at the place of purchase. Toledo grain is free of storage to the purchaser for four days after purchase.

Detroit is free for ten days from the date of receipt in the elevator, or if purchased on the board of trade is free on board of cars, unless the ten days' storage runs out on the hands of the purchaser. Buffalo is free on board after purchase, unless held in store on the purchaser's account. There is very little grain consigned for sale East, except what goes to the seaboard cities, making most of the New England towns common points same rate as to Boston, bringing the trade direct with the consumer or country dealer. The business cannot pay the same rate to Boston, then sell so as to pay local rates from Boston back to the country again. For example, flour in Boston, say $7—cartage, cooperage, commission, insurance, and freight back to Worcester, 50 cents, costing at Worcester $7.50, while the same flour can be delivered at Worcester at the original cost of $7, same as at Boston; consequently the dealings are more direct between producer and consumer.

Question 22. Facts showing increase of cars employed in fast-freight line business on the great trunk-lines between Chicago and the Atlantic seaboard, during the last five years.

Answer. The best evidence of the growth of "all-rail" business is to give the total number of cars passing a given point east or west on one of the main trunk-lines. From 1864 to 1869 the increase was not very large. The following shows the cars passing the eastern division of the New York Central between Utica and Albany:

Years.	East.	West.	Cattle.	Sheep.	Hogs.
1869	176, 175	177, 238	16, 022	3, 213	1,871
1870	212, 092	212, 451	14, 363	2, 839	3,198
1871	242, 103	243, 391	14, 815	3, 193	7,235
1872	270, 800	275, 353	18, 890	3, 102	11,093
1873	330, 798	332, 184	21, 207	3, 319	13,577
1874	344, 194	347, 884	26, 783	3, 391	13,786
	1, 576, 162	1, 588, 501	112, 080	19, 057	50,762

Gain on east-bound nearly 95 per cent. in six years, on general business; nearly 70 per cent. on cattle; little change on sheep; and about 740 per cent. on hogs. All of the increase is undoubtedly of western growth; the "local" along the line not having increased much, if any, during that time.

The shipments of grain by rail from Buffalo elevators, that came by lake, from January 1 to November 30, for three years, are—

	Bushels.
1873	8, 883, 576
1874	11, 033, 082
1875	13, 603, 712

The number of canal-boats cleared from Buffalo, East, in 1869, was 6,700, and in 1875 was 6,344; canal-tolls collected in 1869 was $1,643,136.48, and in 1875 only $789,731.35. Grain moved East by canal, in—

	Bushels.
1872	45, 733, 235
1873	50, 854, 076
1874	40, 982, 288
1875	45, 471, 957

While on flour the shipments have increased wonderfully, owing, no doubt to shipping grades and reduction of canal-tolls. Flour:

	Barrels.
1872	5, 172
1873	13, 316
1874	49, 171
1875	54, 254

Nearly all of which was, no doubt, from Duluth by lake, or from Black Rock Mills' Buffalo.

The total amount of grain received by lake at Buffalo, N. Y., was, for—

	Bushels.
1871	59, 932, 192
1872	58, 284, 568
1873	65, 190, 365
1874	54, 967, 637
1875	52, 289, 357

The exceeding low rates both by lake and rail for 1875 failed to bring out a total amount equal to either of the three preceding years; rates on lake being at times down to 2½ cents per bushel from Chicago to Buffalo, N. Y.; the following being the average for lake and canal for the five years given:

Years.	Lake.		Canal.	
	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.
	Cents.	*Cents.*	*Cents.*	*Cents.*
1871	10.1	9.7	15.9	14.1
1872	12.4	11.4	16.0	14.0
1873	7.4	6.9	12.3	10.6
1874	4.6	4.2	9.7	8.7
1875	5.9	5.6	10.5	9.1

From which it will be seen that for the three years past, when canal-rates have been the lowest ever known, the railroads have taken the largest quantity ever known from the Buffalo elevators east; the shipments via Oswego and Montreal being about the same as usual, at least not difference enough to make any material change in the general volume via Buffalo and canal. From the above figures it will be seen that the production is not increasing with that rapidity anticipated by a large majority of people, or that such increase is carried by rail, or else the increased home consumption is keeping pace to some extent with the productions. It is my opinion that the true prosperity of the country consists in so increasing our manufacturing in the West as to consume the increasing productions, thereby rendering transportation unnecessary and securing full value at home for such productions.

Question 23. Do you think that the demoralization in rates both for passengers and freights during the year 1875 was mainly the result of an excess of transportation facilities above the tonnage to be moved, or as the direct result of contests between the roads for the control of through-traffic, or of both these causes?

Answer. The demoralizations in rates both for passengers and freight for the past, was nothing more nor less than the usual results of a bad faith, cutting rates, dull business, and, in one or two cases, an attempt on the part of connecting trunk-lines in the Saratoga compact to compel those out to come in, also the universal fact of the facilities for transportation being in excess of the demand. The Saratoga compact having but small effect either way, it was powerless to affect reforms. The statement made by the president of the Baltimore and Ohio Road, showing increased earnings on passenger traffic under the low demoralized rates, is a deception upon the public mind. While it may be true that the receipts for passenger-tickets show a large increase, it does not follow that their earnings increased. Tickets being good until used enables speculators, ticket-agents, and others to purchase at low rates thousands of dollars' worth of tickets, the proceeds of which would go into the treasury at the time of sale to swell the receipts, but the passengers may not travel on them for months, afterward, and even then they would be carrying passengers upon those half-fare (or less) tickets instead of the full price asked after rates were restored; the tickets simply being in effect pre paid contracts for future passenger-business. By such means the road may gain some passengers from other lines in prospective. The same system of demoralization in freights contracted ahead securing large shippers on time-contracts, which have to be accepted when rates are restored, but on freight no money is received until the property is carried.

Question 24. What are the ordinary limits of the discretionary powers accorded to agents of freight lines, to railroad agents, and to solicitors of freight, and what abuses have thus arisen?

Answer. Freight agents of railroads proper have no power or discretion when the agreed rates are being maintained; they simply quote the schedule rates, and work for business upon the merits of the line. But when some other road gets a customer from him he at once sets to work to find out the cause, which may be an imaginary one. He reports to his superior officer, and may get authority to meet a supposed "cut rate" or drawback, or secret contract to cover that "special case." Other roads finding out what is being done proclaim it, until the effort to keep rates is broken, then discretion is given to "get the business upon the best terms they can." The worst feature being upon "commissions," where to secure the business the ticket or dispatch agent divides commissions with his customer as an inducement; while this may net the roads the same amount, the customer gets a reduction on the agent's commission.

The departures from the system of holding agents responsible to the superior officers of the road, is, in my opinion, one of the main causes of the demoralization of rates

which so interrupts and harasses the commerce of the country. A road west of Chicago may have its agent in New York soliciting business against a competing line to a common point. To secure business he may give a drawback over his road. This is a direct cut of the rates, done without the knowledge and in direct violation of the agreement of all the trunk-lines, they having no power or control over such an agent The trunk-line losing business through such an agent beyond all trunk-line control, will try to meet the case. There is no way to prevent such things being done except by a clearing-house system for the trunk-lines and their immediate connections joining under an act of Congress to legalize their action, giving them the power under its workings to control all agents of roads belonging to the clearing-house working for competing business. Such roads as do not become members should be compelled to work alone as "local" roads, refusing them all rights of through-bills of lading, through-tickets, through-checks for baggage, or the payment or collection of back charges on freight on their account, or the interchange of freight on passenger-cars. This would very soon make them members of the clearing-house system, and when once a member their agent would be subject to the clearing-house board and have to comply with its rules or go out of office. There would be no danger of the clearing-house becoming a great monopoly, as Congress can fix a maximum rate for passengers and freight. The power to inforce the clearing-house system being derived from Congress, would be subject to Congress for its abuses of power for the roads, as against the people, and at the same time give the means of enabling the roads to correct the abuses among themselves, which at present is equally damaging to both the public and the roads, producing little or no profit for capital invested in roads, while they have the power to build up or destroy the profits of commerce by unsettled and demoralizing rates made oftentimes by men of no commercial knowledge of the effects such actions have upon trade and commerce. Some change must be made. This appears to me to be the best, if properly organized and carried into effect, with proper management under the rules and regulations authorized by Congress. I would also recommend that Congress should authorize a "special" commissioner or clearing-house inspector, whose duty it would be to examine the books and papers of the clearing-house and compel a strict compliance with the principles and the rules, to report to the proper officer at Washington any violation of them, with power to suspend the suspected party until investigation can be had. This system once in force would in the end prove to be satisfactory to all parties.

I am firmly of the opinion that no government should ever undertake the business of transportation, nor any other kind of business, in competition with private or corporate capital. The details would require such an army of officials and operatives under Government control that the political power would become very dangerous to the rights and liberties of the people. The improvement of harbors and rivers, together with the maintenance of light-houses, under Government authority, as securing the avenues for others to do business upon, is national in character, therefore proper. But each individual road, being complete within itself, can manage its affairs independent of others. But no railroad can be run to suit the wishes of individual engine or car owners; to run for business upon the same track with others, regardless of the time-tables or the rights of others, each competing for the same business. A careful observer will see that no railroad can be run upon the same principle as a canal, lake, or river. The roads must be run by managers, superintendents, operatives, &c., subject to the time-tables, and cannot become a "public highway" subject to toll for any one to operate upon at will with their own engines and cars; consequently they must or should be operated by private corporations. Such corporations, having secured corporate rights and franchises from the people through State and national governments, cannot refuse to have the Government exercise its right of guardianship over them by limitation of rates upon through-traffic, where such traffic passes from one State to another to and from competing points. Such guardianship can be best conducted by allowing the roads to manage their own business under clearly-defined rules and regulations, such as a clearing-house system would give, fully authorized by Congress to be enforced in regard to the traffic of the country, with the proper safeguards for their own settlements among themselves, with Government inspectors or commissioners to see that the rules and regulations are fully complied with.

Such a system should be broad and comprehensive enough to cover transportation by rail and by water. The magnitude and scope of the business is of such vast importance to the country, and is so little understood by the people at large, that the Government should, as soon as practicable, establish a separate "bureau of commerce" to enable it to "regulate commerce among the States" in an intelligent manner, for the protection of the people and of the common carrier.

Question 25. What discrimination on through-rates from Chicago to Boston and from Boston to Chicago does the Grand Trunk Railroad insist upon and receive at the present time with respect to the rates charged by the New York Central Railway route, mentioning, if you please, the particular classes of freight to which you refer?

Answer 25. Grand Trunk requires 12 per cent. on rates made by trunk-lines from

Boston. An agreement last fall to maintain full rates by all lines, including Grand Trunk, upon the clearing-house principle of giving each road its percentage of traffic and money, worked very well until Baltimore and Ohio came in and broke up the arrangement.

Question 26. Do you propose that the clearing-house traffic shall be established on the basis of actual mileage or of constructive mileage; and if constructive mileage were adopted would it not lead to very great practical difficulties in carrying out the clearing-house plan?

Answer. The clearing-house traffic would have to be established upon the plan of justice and equalization. There would be no difficulty about that, as most of such differences are already well settled, and would only be continued in the clearing-house system. No practical difficulty would come up in the clearing-house that does not come up out of it, and no place or plan is so well calculated to get them settled than a clearing-house board and by clearing-house rules and regulations.

Question 27. Since the Lake Shore and Michigan Southern Railroad has been controlled mainly in the interest of the New York Central Railroad, has not that company (the Lake Shore and Michigan Southern) found that it could not refuse to let traffic pass over its entire line, or a part of its line, destined to be diverted from the New York Central Railroad to the Erie Road, to the Pennsylvania Road, or to the Baltimore and Ohio Railroad? In other words, has it (the Lake Shore and Michigan Southern Railroad) not found it to be to its interest to offer as favorable terms as possible for such traffic to the Erie, the Pennsylvania, and the Baltimore and Ohio as would prevent traffic from going to those roads by rival routes to its own line?

Answer. When rates have to be made to and from competing points all roads and lines are supposed to share in the rates and traffic, without regard to the roads or lines bringing the business, so that when Empire, or any other line that does not run over New York Central, is offered to Lake Shore and Michigan Southern, that road would receive it upon favorable terms, as against offers made by its competitors, without any regard to its New York Central interest or control.

It does not follow that they would give its influence or unconsigned business to such lines as against New York Central, but would do all it could for New York Central lines running over its road, then take all that all other lines will bring them, to run over the whole or a part of Lake Shore and Michigan Southern Road in connection with other roads working with them upon the same principle that New York Central must work in harmony with the Great Western Railway, Canada Southern, and even with Grand Trunk from Buffalo west, while it may *own* a controling interest in their rival, (Lake Shore and Michigan Southern.) *Ownership of railroads does not, nor cannot, control the routes by which the owners of the property shipped shall be deprived of their rights to designate their choice of routes or lines, therefore the roads must comply with the orders of shippers.*

Question 28. Please to present your views in regard to the existing railroad war, especially as to the transportation of grain.

Answer. The fight is not upon Baltimore, Philadelphia, New York, Boston, and Montreal proper, but upon through-grain for Liverpool and foreign ports, but that cannot be decided without carrying into the traffic grain for consumption. Boston rates proper are generally five cents above New York. But when such grain is exported, then the owner gets an export rebate of the five cents returned, to place Boston upon a par with New York. The proper way for the roads to do is to agree upon rates to the seaboard cities, and let the ocean-rates adjust themselves to those cities as they would surely do, making total through both land and sea to destination about equal. It is very absurd to suppose that the Baltimore and Ohio Road must charge as much from Cincinnati to Baltimore as the New York Central and connections should get upon New England business.

The proper legitimate business of each section would flow naturally to the place of consumption from the place of production at about even rates per ton per mile; but upon the surplus for foreign shipment or for coastwise points, which come into competition with the northern lines, that causes the trouble. During dull times all lines have a surplus capacity which they seek to employ to maintain their position and gain upon their rivals. This must be settled or the roads ruined and no better place or way of settlement could be arranged than through a well-organized clearing-house board. There is no difficulty in securing full car-loads of grain, or full train loads for any of the seaport towns, upon a fair adjustment of the rates among the roads themselves. The port of New York is the best to ship surplus grain to, because the ships of all nations come there with cargo, and the orders for them to load would naturally go there. Consequently, it must be the best market for unsold grain to go to.

Question 29. Please to express your views as to just and unjust discriminations in the classification of freight.

Answer. Just and unjust discriminations are of a twofold character. One is in charging a *local* from a competing point to the place of manufacture on the same road, while on the same kind of goods the through rate is so much less in proportion to the

local that the discrimination is unbearable. For example, wheat from Kalamazoo to Detroit, local, is 12 cents per 100 pounds.

5 bushels of wheat to the barrel make 300 pounds, at 12 cents	$0 36
Elevating charges, 1 cent per bushel, 5 bushels	5
Freight on 1 barrel flour, 200 pounds, to Boston	40
Freight on 100 pounds feed to Boston	20
If made at Detroit for Boston	1 01
Freight on 5 bushels wheat from Kalamazoo to Boston, over the same roads, 300 pounds, at 25 cents	75
Discrimination against Detroit of	26

Or nearly 9 cents per 100 pounds on the same property over the same roads to the same place. We do not claim that the local is too high, but the through is too low, and shuts out all business from such competing points with the large cities on the line of the road, unless we go there and establish a branch house to ship through, with the privilege of grinding in transit, which cannot be done to advantage, as the maker at Detroit does not know the purchaser's destination of the goods when made. Such discrimination is very much worse upon wood manufactures, where it takes nearly the weight in raw material to make the finished article; therefore, the tendency is to wipe out manufacturing in the larger cities and transfer them to competing smaller towns, where the raw material can be had without paying unjust local freight, but can ship out the finished articles at the low through rate. "Special" classifications grew out of some cargoes of coffee being landed at Baltimore for Saint Louis, together with some other circumstances over which the northern road shad no control. Sugar, molasses, crockery, and coffee, entering into the daily use of every household, they become what merchants call "close articles," the freight forming a large percentage of cost. They, being largely of southern growth, could be taken via New Orleans to Saint Louis at very low rates; and, unless something was done to aid the Chicago merchants to compete with their Saint Louis rivals, they and the northern roads would get no share of that class of business. Therefore, the "special class" became a mutual thing for the protection of traffic over the northern roads and for the northern merchants, and becomes unjust to the merchants and people who have to pay high rates upon the same articles from a competing or "special classification" point to a local station under third or fourth class rates; sometimes more money for 100 miles local than for 1,000 miles through, furnishing another evidence of the need of united action through a clearing-house board to adjust classification to a uniform basis.

Question 30. Are railroad companies which enter into pooling arrangements generally able to carry out such arrangements in good faith?

Answer. Pooling arrangements without authority of law authorizing them, and without the united action of a clearing-house board, will not be carried out for any length of time, because they depend upon the whims or views of several individuals, each acting for themselves, instead of as a united whole acting under agreements that are legally binding until the dissatisfied road chooses to withdraw, and when they do withdraw, then they become a local road without authority to issue through bills of lading or tickets over connecting roads that are pooling under clearing-house authority. At present there is nothing binding upon roads. They make and break agreements at pleasure without suffering penalty.

Question 31. Do you not think it is true that the trunk-railroad sfrom the seaboard to Chicago, Saint Louis, Cincinnati, and western points generally, have fully doubled their capacity during the last six or seven years by means of improvements in their roadway and an increased number of cars and locomotives?

Answer. Yes; trunk-lines have no doubt fully doubled their capacity inside of six or seven years, without a corresponding increase of business. The country has been fearfully misled in regard to the quantity to move. We are accustomed to speak of thousands of tons as if it were only a wagon-load.

Question 32. Do you propose that under your clearing-house system the rates allowed to each road shall be based upon mileage and the cost to each road of doing the work? Unless the division of receipts is divided with reference to the cost of transportation on the different roads, it is evident that on some roads having large traffic on an equal division they might make very handsome profits, whereas on another having a very small traffic an equal rate might not pay cost of transportation. In this connection please to state if the clearing-house system would not require constant adjustment based upon the varying cost of transportation on roads; that is to say, if the traffic of a road were increased one or two hundred per cent., it would be able to haul freight at much less cost than before. Then if you do adopt the principle of basing compensation upon cost of transportation, will it not be necessary for every road in the clearing-house to collect statistics as elaborately as those presented by Mr. Fink in the case

of the Louisville and Nashville Railroad and to work up a thoroughly philosophica treatise every year upon the cost of transportation on its various lines and under varying circumstances?

Answer. Under the "clearing-house plan," everything else being equal, the prorate upon miles run would be the basis of settlement without any regard to the cost of running. That principle is already fully settled, so that the clearing-house would only re-affirm the present settled principle. But, as I have said before, where special service is performed in which the whole line is largely benefited, such road by agreement may have constructive mileage added, or terminal charges. Constructive mileage is the best to deal with. But where there are two roads running to the same place, as from Troy to Boston, if one took two engines to haul a train while the other could run down hill all the way without any engine at all, they would both be allowed the same price. The road having the greatest cost to do the work could not afford to make its connections pay extra for their disabilities, as it would create a money interest to work with and for its rival, and in the end would fail to get its share of the business. But if there was *no* rival line, and a part of the road had extraordinary costs and difficulty to overcome, then such road might claim in equity some consideration from the balance of the line to cover its disability, which, if allowed, would hold good until a rival line was built or some changing circumstances changed its relations to the line. Large or small traffic of roads may make some difference in actual cost per ton per mile to haul, but when you take into account the additional cost of facilities that have to be provided, and in large cities the taxes and increased expense generally, the difference is not such as can be taken into account through the traffic account so as to make a departure from prorate a question of settlement, either in or out of the clearing-house, except as before stated, where extraordinary service is performed for the benefit of the whole. No treatise of cost of working the roads would be required by the clearing-house board except in the extraordinary cases mentioned. The cost of working a road may depend entirely upon its local or special business having no connection at all with "through" traffic.

Question 33. Do you not think that the advantages of cheaper transportation at competitive points tends to the development of manufacturing interests at the principal railroad centers to the detriment of the smaller towns? In other words, do you think that the general tendency of our railroad system is toward the development of the large cities or toward an increase in the number of small trading and manufacturing towns?

Answer. My No. 7 explains a part of this question. If competitive centers have the raw material without local transportation, then they would be built up. But with unequal rates to the large towns upon raw material, then the smaller competitive towns would be built up to the injury of larger places. Low rates do not develop traffic very much; *demand* must be met, and the rate does not diminish nor increase the demand, and when the supply goes forward and the demand is full, then no more is wanted whether the rate is high or low. An extreme low rate may start shipment to await future demand, but that is only anticipating or discounting a future dull time, in case the demand does not keep pace with the facilities to move the property.

Question 34. Please to state the distinctions between the conditions of the compact entered into by the railroads at Saratoga in August, 1874, and those of your proposed clearing-house.

Answer. The Saratoga compact did not include all of the trunk-lines, nor was it signed by all the connections of the trunk-lines. There was no withdrawal of agents of western roads from the large cities. But the roads went on upon their own account instead of a joint account. The companies had no power to control, and no knowledge of the business done; being in part not practical railroad-men, they did not know what to do; nor could they impose any penalty for its violation. The clearing-house board would be composed of practical railroad-men representing the principal roads in the lines. Their action would be a united one; all tickets, bills of lading, and agents would be under the clearing-house control, and all settlements with the roads that participate in the business. Consequently they would have the business to do for the benefit of the roads, with power to do it. Should one road give notice of its intention to go out of the clearing-house, it cannot do any harm till the notice expires, and, in case it does go out, it does so with the knowledge that its connections will not accept their business or tickets for through traffic. One month of local-road business would kill its business as a part of a through line.

Question 35. At about what time did the trunk-railroads first begin the business of carrying grain from Chicago to New York by all-rail during the winter season, and in what year did they first begin to compete for the all-rail transportation of grain during the summer season? What rates did they at first consider it was necessary for them to charge in order to warrant them in engaging in that traffic?

Answer. About 1865, and continued to compete both winter and summer since. Rates at the close of the war were high for both rail and water transportation. About sev-

enty-five cents per 100 pounds on grain from Chicago to New York was at first considered low. The average rate for about ten years past would be about forty-five cents for the whole time.

Question 36. Suppose a general clearing-house system should be established throughout the country under the authority of the National Government, as you propose. If after all the roads now in operation had given in their adhesion to the plan, assume that a new line should be built, say from New York to Chicago, which should refuse to enter the clearing-house arrangement and should reduce its rates below clearing-house rates, and thus secure an enormous through traffic, would not the clearing-house roads be obliged to make war upon this new-comer, just as the trunk-roads are now doing in regard to the action of one of the trunk-lines? If, in such a case, the Government were to interfere and force the independent road to make clearing-house rates, would not this be likely to arouse a conviction among the people that the Government was arraying itself against the public interests, and inevitably lead to the speedy and disastrous overthrow of the whole clearing-house system?

Answer. In case of a general clearing-house system being established and it was found to work satisfactorily to the members so as to embrace all the principal competing points, I cannot see how any single road could do it much harm, for the reason that no road can do a successful business that does not connect with roads west of Chicago and Saint Louis and do business to all the eastern cities and New England. How any single (new or old) road could do so without running over roads that were members of the clearing-house, I cannot see. The new road would be a local road and might make war against the clearing-house system from its own points, but the effect would ruin its owners, without very seriously interfering with clearing-house roads. The New York and Chicago traffic does not cover over one-tenth of the general business. No road can be built to make war upon one-tenth of the rail business, and that to a point that would combine nine-tenths rail and all water lines against them. To compete against the clearing-house system, a new system of roads reaching all competing points would have to be built.

The Government would not compel any road to raise the rates, but take the side of the people to compel roads not to raise above a certain sum per ton per mile, and that sum would be upon a fair basis for both the roads and the public. Competition, if any, would have to be done at less than authorized Government rates. A change of classification, by which rates would be virtually reduced, is and would be a decided violation of the rates.

Question 37. Would not your clearing-house system require constant re-adjustments as to "pooling" and division of traffic?

Answer. As before stated, cost of transportation does not generally enter into the prorate system, so that very little, if any, re-adjustment of divisions would be made in the clearing-house system. Therefore, it does not contemplate any re-organization of accounts, nor any change of policy in regard to the business of the roads. But it would be a complete revolution in regard to the present miserable system of agencies and settlement. A "clearing-house" would be composed of members comprising a representation of all roads in interest as directors, while the detail-working of the business would be done by clerks having no interest in any road. The agencies would be joint ones, subject to no one road but only to the clearing-house management, who would issue tickets and bills of lading over all roads to and from competing points for the benefit of all, and the settlements would be made for balances with the freight-auditor of each road for freight, and with the ticket-auditor of each road for passenger business of each road direct with the clearing-house, and not with the agents of connecting lines or between individual roads. The roads, then, could not by themselves pursue an underhanded policy of reticence; nor could they pursue a double policy without being found out. The penalty would leave them so completely cut off that no road would try it a second time.

The clearing-house system is not new. It has been worked with perfect success in England for the past twenty-five years. The business of the banks in New York City could not be done without the clearing-house system of settling balances. The railroad system must sooner or later adopt it. The sooner the better for both the public and the roads.

Question 38. How much greater do you estimate the capacity of a double-track railroad to be than that of a single-track railroad? For the mere purpose of illustration, assume each road to be exclusively a freight-road, how many more freight-cars could be hauled over a double track than over a single track, supposing each to be operated to the full limit of its capacity?

Answer. The capacity of a double-track road over a single-track road would depend entirely upon circumstances. If you had at given points side-tracks so that cars could run one way regular in trains following close, and meet a corresponding number of trains, an immense business might be done upon a single-track road. But where local stations are very close together, and trains do not follow in quick succession, then the single track is very slow and comparatively expensive. The same may be said of a

double-track road, viz, that its increased business may depend entirely upon the provision made at the terminal points to handle the property. I have known the New York Central and Hudson River Railroad to be blocked from New York to Utica, because they could not handle the property at New York. An exclusively freight-road might run a train one way every 15 minutes, provided there were no accidents and the property could be handled quickly at its destination. While upon a single-track, with sidings to hold six trains 30 miles distant, would run 6 trains in 1½ hours. Then the 30 miles would run trains the other way for 1½ hours, thus reducing the capacity of running one-half, and in case of delay with many trains would create confusion in the running of trains the whole length of the road.

Question 39. Is it not true that a very large proportion of the single-track roads engaged in traffic between the East and the West are now carrying a traffic much below their actual capacity?

Answer. I have no doubt that as a whole single-track roads could do twice the business they now do if they were properly managed. The capacity of roads depends very largely upon the management. To give an illustration: In my early railroad management it had been the custom on a local road to bring a train of 30 cars after 6 o'clock p. m. After the usual manner of slack management at that time, they would not transfer the loads until next day, and as only one train per day was run on that local road, they would be obliged to have 50 cars, unless they were unloaded in the night. Therefore I adopted the plan of unloading and starting the freight on a midnight train. The cost to transfer would be about $4 extra. The result was the connecting road took the same cars back the next morning, and the freight would be about 200 miles on its way, both roads having gained the use of 25 cars for one day, besides having them in the trains instead of blocking up our side-tracks. It is the active use of the facilities of roads that proves how much can be done. Just now the business here is blocked for want of cars, and yet cars do not make an average of over 60 miles per day, while for three years I made an average of over 100 miles per day, when the same road had less than one-half the motive-power that they now have. This is partly owing to the custom of sending cars to local stations to load and unload, and the unjust practice of using through or line cars locally on their return trip. The abuse in the use of through or line cars must also be corrected.

SUPPLEMENTARY STATEMENTS, PRESENTED BY MR. J. D. HAYES, IN REGARD TO A PROPOSED CLEARING-HOUSE SYSTEM.

Mr. Fink's views are in the direct road toward the clearing-house system. I maintain that the competitive business as now conducted by the railroads, with their distinctive, separate offices and army of agents, each bidding against each other for the same business, and in many cases going over thirty to fifty per cent. of distance over the same roads, is wrong in principle, and, if continued, will sap the very foundations of commercial principles and bring the entire railroad system under the control and management of a few men through the process of failure and bankruptcy, instead of a wise system for the benefit of all corporations, under the clearing-house, for the management of all competitive or through inter-State business, under authority of an act of Congress, and subject to a United States commissioner, to see that the clearing-house system is properly and honestly carried out by the railway officials that compose the clearing-house board, while at the same time it does not interrupt nor interfere in any way with the local business, which will continue under the management of each local corporation. To illustrate the principle, as now carried on, I will give an example:

Rent of office in Chicago for Red (or any other) line, say	$3,000
General agent of the line	4,000
Contracting agent	2,500
Bill-of-lading clerk	1,800
Messenger	1,000
Claims clerks and operators	1,500
Sundries	200
Advertising, &c	2,000
Total for freight	21,000

for one "line" office at one place.

Blue Line, Red Line, Canada Southern, White, International, and Hoosic Tunnel, all running over the New York Central Road, six offices and six different sets of agents bidding against each other for freight to run a part of the way over New York Central Road, they (New York Central) paying about 40 per cent. of the whole expense, for no other purpose than cutting their own throats on rates, while the same expense under the clearing-house system would do the whole, and include Erie and North Shore, Grand Trunk, Baltimore and Ohio, Pennsylvania Central. When you include traveling-

agents, solicitors, &c., the total expense of the "clearing-house" plan for agencies alone would be about one-tenth of what it is under the present *cut-throat* plan. Then take the fair, honest, low rate, and you will have from 30 to 40 per cent. more net money than under the present uncertain and fluctuating system of war to-day with all classes at 20 cents, New York to Chicago, than a patched-up peace, with fair rates restored, with the secret payment of drawbacks to wholesale dealers, which by right should be paid openly, upon the universal principle of recognition of difference between wholesale and retail, the drawback to be graded in proportion to the actual legitimate business of the individual or firm, and not a combination of individuals or firms, such as "protective freight unions," formed for swindling the roads out of payments to the agent, on the one hand, while the "protective freight union" agent is being paid by the "union" to swindle both parties; on the other hand, I say, the net results of the clearing-house system of fair, honest low rates, would be from 30 to 40 per cent. more. Each road would get its own fair, legitimate business, everything else being equal; if not equal, then upon all business that is common to all, upon the uniform basis, let the clearing-house board agree upon the percentage each have done heretofore, and go on upon that basis, allowing the road doing more than its percentage the actual expense of hauling its increased tonnage and pool the surplus earnings upon the same basis of percentage, or equally, so that each would get its fair share of surplus increase. After one year's working of the clearing-house plan each would have settled down into its fair, legitimate proportions, and the business would be about evenly divided in proportion to the needs of the country tributary to each road or system of roads. Then, again, a very great saving of expense in stationery, billing, checking, and auditing-clerks will be saved. For example, now a through bill is made from Chicago to Boston, each of the four companies check up, audit, and rebill local over their roads, in addition to the through way-bill, while my clearing-house system would send each freight-auditor an impression-copy of each way-bill, from which they would charge the clearing-house with its share of earnings. Suppose there were six hundred bills in one week between Chicago and Boston, via Boston and Albany, New York Central, Great Western, and Michigan Central Railroads, total footings being, say, in round numbers, $60,000. One division of that total sum would give each road its share of the earnings, so that when the clearing-house abstract is received by the freight-auditor, showing numbers and totals, say—

Chicago to Boston, bills 1 to 400, inclusive	$40,000
Boston to Chicago, bills 500 to 700, inclusive	20,000
Total both ways	60,000

Having the same numbers of way-bill and numbers on the abstract-books in each freight-auditor's hands will give the same total amounts between the two places. The percentage of the total is the same, without any regard to the classification or rates, so that—

Michigan Central Railroad	$27\frac{87}{100}$	per cent. of $60,000 is	$16,722
Great Western Railroad	$22\frac{47}{100}$	per cent. of $60,000 is	13,482
New York Central Railroad	$29\frac{80}{100}$	per cent. of $60,000 is	17,880
Boston and Albany Railroad	$19\frac{86}{100}$	per cent. of $60,000 is	11,916
Totals	100	per cent	60,000

The same system may apply to a single way-bill, a week's, month's, or year's business between those points over those roads. And the same system is applied to all roads and all lines over all routes. Each would deal with totals over each route, both in freight and passenger business, the settlement of balances being upon clearing-house certificates from the creditor road to the debtor road, or by draft upon the debtor road from the clearing-house direct upon freight and passenger auditors, and payment to the creditor road by clearing-house check once a month or week. The plan is very simple and complete, and can be worked with success to all parties. Nothing is wanted only that the roads and the public shall fully understand the vast benefits to result to both by its working, while at the same time it will "regulate commerce between the States," and keep the management virtually in the hands of railroad representatives in the clearing-house board, while the board would be under the inspection of a United States commissioner, who should be under the direction of a Government department of commerce.

This letter may be somewhat imperfect, as I have replied upon the impulse of the moment, with some interruptions. Yet I think it can be seen that the principle laid down, and which, I claim, is the only true one to solve the entire difficulties that threaten to swallow up the $4,000,000,000 invested in railroads and about $1,000,000,000 of vessel property, if our present system is to be continued, and to rear upon their ruins a monopoly in the hands of a few individuals that will control the value of every man's property and crush out all chances of new enterprises or legislation to control them.

BASIS FOR A RAILWAY CLEARING-HOUSE SYSTEM.

(*a.*) The trunk lines, with their immediate connections, to make up a statement, showing the number of passengers carried and money earned by each, to and from competing points, and the number of tons of freight carried under the different classifications, with the amounts earned, say for three years past, the average percentage of the total to form the basis of the percentage for future business.

(*b.*) The entire competing business, both in freight and passengers, to be done by the clearing-house board for the account of all roads that are members of the clearing-house.

(*c.*) All through tickets and bills of lading to be issued by the clearing-house and all settlements made with the general ticket agents for each road's share of earnings of passenger traffic, and with the freight auditors for freight earnings, each road in interest receiving clearing-house impression-copies of each way-bill or ticket statement.

(*d.*) The clearing-house to give to each line its share of the business and earnings, according to the agreed average percentage to be done by each; but should there be much deviation from this rule, the lines doing an excess of the business would be allowed a percentage for hauling such increase, the balance to be prorated over all the lines in proportion to the agreed basis of percentage.

(*e.*) Each road to do its own local business, but its competing business to be done through the clearing-house system.

(*f.*) To make the system effective, a national clearing-house law should be passed by Congress to regulate commerce between the States and to relieve the through business from very annoying local State laws, which affect inter-State traffic; such law to provide for returns by all railroad companies to the States in regard to their local traffic and to the clearing-house board in regard to their through or competing traffic.

(*g.*) The General Government to appoint special railway commissioners, charged with the duty of attending to the administration of the clearing-house laws.

Such a system would enable the roads to carry on their competing business through a legalized system managed by themselves as members of the clearing-house, and at the same time it would enable the Government to obtain information in regard to the inter-State commerce of the country, now practically ignored. Thus, Congress would obtain the knowledge necessary in any attempt to regulate commerce among the States.

It is also assumed that the clearing-house would become a part of the much needed department of commerce.

APPENDIX No. 3.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF NEW YORK CITY AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY ON RAIL AND WATER LINES, BY MR. THEODORE F. LEES, GENERAL AGENT OF THE NEW YORK CHEAP TRANSPORTATION ASSOCIATION. 1876.

Question 1. Please to describe the contest which has been carried on several years between the Boston and Albany Railroad and New York Central Railroad on one side and the Grand Trunk and Central Vermont on the other as to west-bound freights from Boston and other points in the New England States to the West, the nature and extent of the discriminations thus induced, and the circumstances attending the recent settlement of the dispute and the condition of such settlement so far as made public. With reference to discriminations as to the transportation, of what classes of goods have New York merchants made complaints?

Answer. The Grand Trunk and Vermont Central Roads form a through trunk line from the seaboard to the State of Michigan, but the geographical position of the line tends largely to restrict its traffic to carrying between New England and the Northwest. The route lying so far to the north is without any important connections until it reaches the State of Michigan, where, by means of the Michigan Central Railroad, Chicago becomes its radiating-point. Under these circumstances it cannot compete with the other trunk lines for business between New England and the Southern States, and all business south of a certain point in the West must be taken at a disadvantage as compared with the facilities of the Boston and Albany and New York Central routes. The Grand Trunk is, from its position, precluded from competing for west-bound business out of New York, except in a very limited degree to certain favorable western points, and even then under a disadvantage that must be apparent. Its comparatively small local traffic furnishes another reason for the tenacity with which it clings to such through business as it can take advantageously.

Such considerations naturally deter the managers of the Grand Trunk Company from entering into a combination with the other trunk lines on equal terms. They insist upon an allowance of about 10 per cent., (the privilege of carrying at rates that much under combination rates,) and it is generally believed, and I have never known it to be controverted, that such a concession has been made to them whenever they have been parties to a combination. Directly, the Boston and Albany and New York Central managers find it necessary to secretly make a corresponding concession to their patrons shipping to points available to the Grand Trunk Road, and the latter is led to overstep the terms of the combination. A sharp contest for the New England business follows, while the combination holds, out of New York. As a result the discrimination against New York increases from 10 per cent., at times, to 100 per cent. The discrimination seems to vary in degree only. The continuance of a wide discrimination for any length of time is quite certain to rupture the whole combination and bring about what is termed "demoralization in rates."

There have been times when the Grand Trunk has not been a party to combinations entered into by the other trunk lines. In such instances Boston has not been included, for the reason that the New York Central could not include it without surrendering a large portion of its business to the Grand Trunk. As a result we would at such times not only witness an active competition between the two roads named for Boston and other New England business, but the Erie and Pennsylvania companies would receive at Boston, transport to this city by water, and to western points over their roads at less rates than they would transport from this city to the same western points.

The "settlement" of the dispute referred to in the inquiry was based upon a concession of, say, 10 per cent., but the arrangement or settlement was of short duration. At this date the relations of the eastern combined roads is anything but harmonious, while the "pooled" western connections have openly declared war with one another. Highly creditable authority informs me that a certain trunk line out of New York has just come into possession of a correct memorandum of three hundred contracts made by the New York Central out of Boston to the West since the last "settlement," at rates below the rates agreed upon and lower than can be had out of New York. (I may be able to furnish an appendix to this.)

The discrimination has extended to all classes of goods, and complaints have been made in reference to all classes from first class to special, although it cannot be questioned that the diversion has been far more apparent in the lower class; that is, fourth and special classes, embracing heavy commodities of small value, and on which the margin of profit is small to the merchant, and on which the cost of transportation is a more important consideration than the time.

When the railroads combine without including the Grand Trunk Road, (which has been done formerly,) the combination covers New York, Philadelphia, and Baltimore only. The Erie, Pennsylvania, and Baltimore and Ohio would readily include Boston; but the New York Central cannot consistently do so independent of the Grand Trunk. As a result, while rates are nominally firm out of New York, all the roads are striving for Boston business. The New York Central, the Pennsylvania, the Erie, and the Baltimore and Ohio will, under these circumstances, give through bills of lading from Boston to western points at less rates than rule from New York to the same points, although the three latter incur an arbitrary charge for transportation by water from Boston to their eastern termini.

It is safe to say that during the period from January 1, 1875, to March 1, 1876, the New York rates were from 10 to 100 per cent. higher than the Boston rates. (See schedule of rates accompanying resolutions, &c., adopted at the merchants' meeting, December 8, 1875.)

In the establishment of the tariff from the West to the different seaboard cities, Chicago is made the indexical point, and the custom until recently has been to fix the rate to Philadelphia five cents per hundred pounds more than to Baltimore; to New York, five cents more than to Philadelphia; and Boston, five cents more than to New York. This plan, even when maintained to all points, operated against the interests of New York and in favor of Philadelphia and Baltimore. But there has invariably been difficulty in maintaining the tariff. There seems to be no doubt that Boston shippers very generally received a drawback equal to the difference of five cents against them in the tariff as compared to New York. The competition between the Grand Trunk and the New York Central roads to that point, which has proved to be inevitable, notwithstanding combinations, has perhaps been a prominent cause of overcoming any nominal difference in favor of New York, while the excess of five and ten cents of the New York tariff over the tariffs to Philadelphia and Baltimore, respectively, has until recently been pretty steadily maintained. I might add that the merchants of New York believe that the comparatively easy grades of the railroads terminating here and the greater magnitude of west-bound business are considerations that fully offset the shorter mileage of the Philadelphia and Baltimore lines.

The interest of the New York Central Road in New England business induces a policy which heretofore has operated against the commercial interests of New York. About 70 per cent. of that road's east-bound freight goes into New England, and the contest with the Grand Trunk for that business has sometimes been carried at New York's cost.

Question 2. To what extent do such discriminating rates apply to goods manufactured or produced in New England, and to what extent to goods the growth or manufacture of foreign countries?

Answer. Such discriminating rates apply to both the products of New England and the products of foreign countries, but I know of no rule or data from which to estimate a probable proportion between the domestic and foreign products to which the discriminations apply. Investigation might show, as conversations I have had with prominent New England merchants indicate, that such commodities as boots and shoes, prints, cottons, woolens, &c., that rate as first-class, and great varieties of hardware, tools, &c., that rate as second-class, make up the greater part of New England products shipped to the West. In that event my opinion would be that the diversion arising from such discrimination would be most apparent in foreign products that rate in the lower classes, such as tin plates, fence-wire, soda-ash, &c. The diversion of this class of imports has been keenly felt by New York merchants.

Question 3. What class or classes of goods intended for consumption in the Western States now supplied by New York would have been deflected from New York to Boston by the continuance of discriminating freight-rates, such as those referred to?

Answer. All classes of goods supplied by New York to the Western States are more or less liable to deflection to Boston, excepting certain special articles peculiar to the New York market. For instance, certain varieties of soft hats manufactured in the vicinity of New York can only be obtained of the manufacturers or contractors here. But with few exceptions the entire list of articles upon the classification schedules (a copy of which will accompany this report) are subject to deflection, the degree of deflection being, as before intimated, proportioned somewhat to value, weight, &c. Dealers in dry goods and other light commodities do not apparently interest themselves so much in the question of discrimination in rates as the dealers in the heavier classes of goods.

These points all considered uniformly indicate to my mind that a continuance of a

discriminating tariff would be felt more and more by the importers of heavy commodities, such as those indicated, and to which may be added coffees, foreign sugars, &c.

Question 4. Please to designate the classes of goods manufactured in the New England States, and, in so far as possible, the States in which manufactured, which would, under the discriminating conditions mentioned, be deflected from New York to Boston; and state if, under the discriminating rates complained of, it would be possible to deflect from New York to Boston any very considerable portion of the manufactured goods of New England now shipped to or sold in New York.

Answer. This inquiry is partially answered in the foregoing. It should be remembered that the principal manufacturers of New England are represented by the same firm in New York and in Boston or some other New England city. For instance, George C. Richardson & Co., the well-known dealers in cotton goods, operate largely from both New York and Boston. An order may be taken in New York and the goods shipped from Boston, and *vice versa*. Merchants of this class inform me that the difference in rates of freight has not been so prominent a consideration with them as they believe it has been to others. Carpets and other woolens, although first-class freight, seem to be more readily deflected. They are heavier, and the demand for them periodical rather than continuous, so that stocks can be purchased when times and freights are favorable. The manufactured articles of New England are largely controlled by commission merchants in New York or Boston, or both, and oftentimes by the same concern in both places. An order taken at either place may be filled at the manufactory in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, or Connecticut.

Question 5. In the opinion of some of your best-informed merchants, what is the relative proportion of the manufactured goods of New England which are sold in New York and in Boston?

Answer. Some of our best-informed merchants, those who are doing business in both places, inform me that of New England manufactured goods about 75 per cent. are sold in New York and 25 per cent. in Boston. The estimates vary from three-fourths to one-fourth, to two-thirds to one-third. But the place where the goods are sold is not conclusive as to the point shipped from, or as to what local interest is involved.

Question 6. If such discriminations as those referred to should continue, what particular lines of business do you think would be deflected from New York to Boston?

Answer. This question I understand, is not limited to goods of New England manufacture, and from what has been elicited it seems clear to me that business in those lines of heavy imported goods of low classification already intimated would be deflected more and more by a continuance of the discrimination referred to. You can readily note the different kinds of merchandise on the schedule of classification which I send you.

Question 7. Do you regard the discrimination against New York in respect to the Boston and New England business generally as merely the result of a contest between various roads?

Answer. The discriminations against New York cannot justly be attributed to a disposition on the part of railway managers inimical to the interests of New York. They arise unquestionably from the accidental relations to one another of different railroads and the want of some general and proper supervision of railroads doing an interstate traffic. A railroad—as, for instance, the Lake Shore and Michigan Southern Road—may be a common connection for the Boston and Albany and New York Central, the Hudson River and New York Central, the Erie and the Pennsylvania Central, (via the Philadelphia and Erie Road,) but interest may lead it to prorate a lower tariff with one than with another of the roads of which it is a connection.

Question 8. Which of the roads do you think are directly responsible for the state of things complained of, and which have simply adopted defensive or retaliatory measures?

Answer. As to which of the roads are directly responsible for the condition of things, there is doubtless room for a difference of opinion. Each aims to serve its own interest; and all reason from the stand-point that they are operating *with* the public instead of *for* the public. With the Grand Trunk upon the north, and the Baltimore and Ohio upon the south, the former a cheap-carrying road on account of its semi-bankrupt condition, and the latter a cheap-carrying road on account of its sound financial condition, New York is, it seems to me, quite naturally at a disadvantage, with her trunk lines loaded down with watered stock. The Erie, which has to pay interest on but a small part of its obligations, might be a cheap carrier, but its interest lies in combination.

Question 9. Do you think that the recent adjustment of west-bound rates, which avoided the discriminations against New York, was the result of force of public opinion or of the necessity for an agreement between the roads for their own protection?

Answer. The recent adjustment of west-bound rates was doubtless hastened by public opinion, although it is probable that the railroad managers would sooner or later have met in convention, as they had so often done before, and established a uniform tariff.

It is also probable that the repeated exposition of facts made by the Transportation Association contributed greatly toward creating a well-founded public sentiment that made the New York roads more tenacious of local interest than they would otherwise have been.

Question 10. Please to state as precisely as possible the particular branches of commerce which have been to any considerable extent deflected from New York to other Atlantic sea-ports, and state the opinion generally entertained among merchants at New York as to the cause or causes of such changes in the course of commerce.

Answer. This inquiry is partially answered elsewhere, where reference is made to imports. Trade in heavy groceries has been largely deflected to Baltimore. The various branches of the dry-goods trade have probably all suffered more or less from deflection to other points, though it would, perhaps, be incorrect to attribute the general depression in these or other branches entirely to the deflection of trade to other points. The "times" have something to do with it, although the chief cause, in my opinion, is the diversion of the western products to other markets. More favorable freight rates and better terminal facilities have caused the diversion, and the movement of the staple products of the country has a controlling influence over the general commerce. These commodities of low classification, and that ordinarily involve small profits, are the first to yield to diverting influences.

Question 11. It is understood that the Baltimore and Ohio Railroad allows a rebate of 3 cents per 100 pounds to shippers on all grain brought over that road for exportation to foreign countries. Is any corresponding allowance made at New York?

Answer. The rebate of three cents per hundred pounds has been discontinued by the Baltimore and Ohio Company. Under the arrangement of March 2d, the rate on grain for export via Baltimore is the same as via New York, but the Baltimore route is allowed to rebate 1½ cents on the ground of short mileage. There is no allowance at New York.

Question 12. What have been the relative ocean rates from Baltimore to Liverpool and from New York to Liverpool during the last year?

Answer. The ocean rates from New York to Liverpool, and from Baltimore to Liverpool, have, during the past year, been very uniform. They fluctuate in either place according to supply and demand. Vessels await orders at the Delaware breakwater, and a rate to Liverpool is general.

Question 13. Have the railroads terminating at New York entered into any arrangements with steamer lines designed to meet special advantages afforded at Baltimore?

Answer. The railroads terminating at New York have no special arrangements with steamer lines. In giving a through bill of lading from Chicago to Liverpool the steamer rate is simply added to the inland rate, and a through rate thus made. Any modification of such through rate the road has to stand and leave the steamer rate unimpaired. In short, there is no arrangement under which the railroad can make such through rates as they think best and prorate with the steamer lines.

Question 14. Are steamer lines at New York to any extent purchasers of grain for the purpose of completing cargoes to Europe?

Answer. This inquiry is quite differently answered by different parties, but the fact seems to be about this: There is a minimum rate of 4 pence per bushel on grain to Liverpool. No steamer-line can take a cargo below this rate; and consequently, when under the influence of the supply-and-demand rate, rates to Liverpool are at the maximum point, and there is difficulty in getting a cargo; the line will sometimes purchase for its own account. I do not think the lines purchase from choice, but rather from necessity.

Question 15. Please to state whether, in the opinion of some of your leading merchants, the fluctuations of rates on railroads are or are not greater than those on ocean freights generally.

Answer. The fluctuation of ocean rates are probably equal to the fluctuation in railroad rates. On merchandise, ocean rates range from 20 to 50 shillings per ton. On grain, from 4 pence to about 11 pence. I obtain these figures from merchants and from the agent of the Erie Railway, who has charge of the export business.

Question 16. What is the present charge per bushel for the direct transfer of grain from railroad-cars to sea-going vessels, and what has been the average cost of such transfer from canal-boats to sea-going vessels during the last year?

Answer. Formerly there was a charge made by the roads for delivery alongside of vessels or warehouses additional to the freight-rate; but after a protracted controversy between our grain receivers and the roads that custom was, about a year since, abolished, so that now the freight-rate includes delivery alongside of vessel or warehouse; that is, "lighterage" is included. At the vessel-side the "floating elevator" is called into use. The charge for elevating, including trimming, is ¼ cent per bushel; weighing, ¼ cent per bushel, making 1 cent per bushel. For "screening," (which is optional,) a further charge is made of ¼ cent per bushel. The vessel incurs an expense of ¼ cent per bushel for labor in receiving and stowing the grain, but that is included in the ocean rate of freight. In the absence of stationary elevators at tide-water at

the termini of the roads, the above "regular" charges are liable to be varied at times by circumstances.

Question 17. Please to state as concisely as possible the purely commercial advantages expected to be realized at New York from the new grading system, and state whether the system will apply to grain for home consumption as well as for exportation to foreign countries. Have other Atlantic sea-ports adopted a system of grading grain similar to that established at New York?

Answer. The full advantages of the grain-grading system cannot be realized without elevating-warehouses at the termini of the railways, where cars can be unloaded soon after arrival. With the grading system and proper terminal facilities the difference of several cents a bushel in values of small and large lots of grain received is abolished, as lots of any size can be inspected, graded, and put with grain of the same grade in warehouse. When grain was sold by sample, each lot had to be kept separate on the barge which conveyed it to the warehouse and also at the warehouse. The disadvantages attending small lots of, say, two or three car-loads amounted to, on an average, 3 cents per bushel. Twenty cars may be shipped from Chicago to New York, but from various causes incidental to railroading may arrive in lots of three or four cars, and with from one to three or four days between arrivals. Such an occurrence, and it is not an uncommon one, would be calculated to destroy any ordinary commercial reckoning were its effects not overcome by the grading system. So the direct effect of the grading system is to equalize the values of receipts, and to open the way for a reduction in terminal charges. It also is the basis of a first-class bankable collateral in the form of a warehouse receipt. I believe the four principal Atlantic sea-ports have all adopted the grading system. It applies to grain for home consumption as well as for export.

Question 18. What, in the opinion of one or two well-informed railroad men, is the precentage respectively of the tonnage of first, second, third, and fourth class freights from New York to the West.

Answer. Estimates by railroad men differ but little as to the percentage respectively of first, second, third, fourth, and special classes of freights. Two good authorities estimate as follows:

	First class.	Second class.	Third class.	Fourth class.	Special class.
Estimate No. 1	30 per cent....	15 per cent....	5 per cent.....	10 per cent....	40 per cent.
Estimate No. 2	25 per cent....	20 per cent....	5 per cent.....	15 per cent....	35 per cent.

In both instances fourth and special classes aggregate 50 per cent., and the first and second classes 45 per cent.

Question 19. What measures have been taken or are being taken by the several railroads entering New York for the erection of elevators at which sea-going vessels can load?

Answer. The New York Central and Hudson River Railroad Companies have in process of construction an elevator at the foot of Sixty-third street, on the Hudson River. This elevator will have a capacity of 1,500,000 bushels and is expected to be completed by September next.

The Pennsylvania and Erie Companies are looking for situations and making estimates for the construction of elevators at tide-water, but as yet have no work under contract.

As mentioned in answer to question 18, this class of improvements is necessary in order to fully utilize the grading system.

Question 20. Is the rebate allowed on grain exported via New York made for the purpose of enabling American grain to compete with foreign grain in British ports, or is it simply the result of a contest between rival trunk railroads to the various Atlantic sea-ports or rival steamship lines for the purpose of securing business?

Answer. If there is any rebate allowed on grain exported via New York it is secretly allowed by the railroads and is the result of competition.

Question 21. For every 100 loaded cars of freight received at New York from the West, about how many car-loads are shipped from New York to the West; *i. e.*, west of Buffalo and west of the Ohio River?

Answer. For every 100 car-loads of freight received at New York, there are probably about fifty car-loads shipped west of Buffalo, &c., from New York. This seems to be the general estimate. The proportion varies at different seasons, but the above is not far from correct as an average estimate.

Question 22. Will you please to describe approximately the area in the Atlantic States within which the New York grain-market competes with other markets for the distribution of western grain and flour?

Answer. This is a very difficult question to answer with any degree of definiteness.

I have conferred with such men as Mr. Blanchard, of the Erie Road, and all concur in the statement that a line can be drawn nowhere in the Atlantic States limiting the market for grain and flour distribution from New York. There is a constant trade with every Atlantic port—both a regular and incidental trade.

The incidental trade is where a return freight is desired, and is enjoyed in a greater or less degree by all of the chief sea-ports.

The shipment of corn from Baltimore to Boston, and (as I have been informed) to Portland, illustrates the incidental trade; but in addition to this, New York has a regular trade with all the coast States.

Question 23. Do the grain merchants of New York regard the direct shipment of grain from western points, on through consignments to Liverpool, as a business which is likely to detract very much from the trade of New York City?

Answer. The direct shipment of grain from western points, on through consignments, is regarded as a growing business.

This business has sprung up since the railroads have become great grain-carriers, and is one of the results of this change in inland transportation and the consequent increase of routes to the sea used for the grain traffic.

I believe too, that uniform rates, via the different sea-ports, which is likely to become a settled principle with our transportation system, is calculated to develop the business.

The New York commission merchants who formerly served the foreign houses are now largely superseded by a partnership representation; and again, in place of the western commission merchant we now frequently find a branch of a New York house. I know of no data from which an estimate of the percentage of increase in direct shipments can be made. There also appears to be a tendency to establish an identity of interests at the necessary points.

Question 24. How have the rates on west-bound freights ruled since the opening of the railroad war in April last?

Answer. There is no doubt whatever that freight has been carried to Chicago from New York for 13 cents per 100. In fact, that has been the "card rate" for special class, while quite frequently classification has been ignored and goods of a higher classification taken at this special-class rate. Rumor says sugar and certain other heavy goods have been taken at considerably less than 13 cents, but it is difficult to authenticate such instances. If the lower rate is made, it is to large shippers on special contract, who will not impair their interests by divulging the facts.

The rate on first class has gone below 20 cents, (all rail,) and I know of third and fourth class shipped by rail and lake for 9 cents. I believe within the last ninety days contracts have been made for one year on the basis of the present low all-rail rates to Chicago.

It is reported, by those who have opportunities for knowing, that Mr. Vanderbilt contemplates establishing a line of steamers between New York and Liverpool to operate in connection with the Central Road on through business.

The contest which has been going on since last April may be attributed to the discovery by Mr. Vanderbilt that the operation of former tariffs based on the mileage of the trunk lines was seriously impairing the interests of his road.

Merchants of New York had for a long time contended that tariffs thus based operated against the commercial interests of this city. The former method of making tariffs I have heretofore fully described. Mr. Vanderbilt last spring repudiated that method and announced that grain for export would thereafter be shipped to New York at as low rates as to Philadelphia or Baltimore. This radical departure from established rules brought on the contest, which still continues, and for the time being there has been no distinction between grain for export and other grain. It is well understood that at the recent conference between the roads Mr. Vanderbilt's competitors (Pennsylvania Company and the Baltimore and Ohio Company) were willing to concede the point actually contested for by Mr. Vanderbilt, but difficulties in the way of making an absolute distinction between grain for export and other grain have thus far prevented a settlement. For instance, grain is shipped to the seaboard, say in three classes: first, grain consigned for direct shipment to Europe; second, grain consigned to millers and others for home consumption or manufacture; third, grain shipped on the market, which may eventually be either export or home consumption grain. There would not be much trouble about the first two classes, but with the last class named, which is a very important element in the grain business, there would be opportunities for evasion and abuse.

It is apparent that the conditions attending grain shipped on the market (third class) are of vital interest to this city. In the case of grain shipped direct from Chicago to Liverpool the concomitant profits, which follow the channel of commerce, are perhaps the chief consideration. So the commercial interests of New York in the matter of grain center in these two classes—the first and third—and any discrimination in rates affecting them will necessarily be felt. The railway managers and others have of late given this subject much attention, but no plan has yet been devised that will

provide a uniform rate to the different seaboard cities on export grain and at the same time preclude the possibility in the case of the third class of shipping home-consumption grain covertly at export-grain rates.

Possibly the result will be a uniform rate on all grain. More about this in later numbers. Mr. Vanderbilt has announced that it will be the future policy of his road to make rates from all competitive points in the West the same to New York and Boston that they are to Philadelphia and Baltimore on competitive business. West-bound, he says, will be put on the same basis precisely.

The idea is this: All through competitive business between the West and the four chief seaboard cities, both east and west bound, should, in Mr. Vanderbilt's opinion, be done at a uniform tariff.

Every former basis of tariffs has appeared to operate inequitably and proved a failure. Public opinion in both commercial and railway circles is inclining more and more toward Mr. Vanderbilt's position, and, notwithstanding some occasional inconsistencies on the ground of mileage, his action seems to me a step in the right direction and in the interest of the railway system as well as of commerce.

There are exceptions to every rule, as, for instance, the twenty-cent rate obtained by the Baltimore and Ohio from Chillicothe, Ohio, to Baltimore, in the face of an eighteen-cent rate from the same point to New York.

Question 25. Has the New York Central Railroad storage-warehouses or elevators at Athens, and what is their capacity?

Answer. The store-houses of the New York Central at Athens were destroyed by fire a short time since, and I am informed by an officer of the road will not be rebuilt. The company's new elevator at the foot of Sixty-third street, North River, is just about complete, and will probably for the future supersede Athens. The capacity of this elevator is 15,000,000 bushels.

Question 26. About what proportion of the total through-freight of the New York Central Railroad east-bound goes to Boston, and what proportion to New York?

Answer. Mr. Rutter, general freight agent New York Central, in answer to your inquiry as to the proportions of the total through-freight of his road east-bound that go to Boston and New York, said the Boston freight was less than one-third the New York freight. On referring to official papers, he gave the relative proportions as 30 to 103.

Question 27. Will you please to state succinctly the provisions of the *pro rata* freight law which has been advocated before the New York legislature?

Answer. The *pro rata* freight law before the last legislature of this State centered upon a single feature. It sought to provide that the rate per mile for any number of miles within the State should not exceed the rate per mile on through freight to Chicago or elsewhere. A bill of this character has been repeatedly introduced in the legislature of this State, and is regarded by many as a "strike" designed to benefit pecuniarily certain members.

Question 28. Will you please to furnish to me a copy of the freight-tariff in force between New York and San Francisco, giving both east-bound and west-bound rates?

Answer. I find that east-bound freight from San Francisco to New York is shipped mostly on special contracts from time to time, the rate varying according to the facilities and inducements offered by the Pacific Mail line. The tariff on west-bound freight is made from Chicago, and is based upon a different classification than that in force on eastern roads. The rate from New York to Chicago on the eastern classification is added. The tariff per 100 pounds from Chicago is: First class, $4.68; second class, $3.90; third class, $3.12; fourth class, $2.34; class A, $1.95; class B, $1.56; class C, $1.36½; class D, $1.17.

APPENDIX No. 4.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF CHICAGO AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, BY MR. CHARLES RANDOLPH, SECRETARY OF THE BOARD OF TRADE OF CHICAGO. 1876.

Question 1. A statement showing the proportion of first, second, third, and fourth class tonnage shipped east from Chicago by rail, and received at Chicago from the East by rail.

Answer. The aggregate amount of tonnage moved to and from Chicago by the five trunk-lines of railway in 1874 approximate as follows:

Lines.	Received at Chicago.	Shipped from Chicago.
Michigan Central	259,600	564,560
Lake Shore and Michigan Southern	262,170	636,950
Pittsburgh, Fort Wayne and Chicago	356,700	468,900
Pittsburgh, Chicago and Saint Louis	242,500	243,550
Baltimore and Ohio	9,930	7,240
Total tons	1,130,900	1,921,200

The above statement embraces both local and through traffic.

A very careful computation of such data as is available indicates that about 20 per cent. of west-bound freights by these lines is below third class, being embraced in fourth class or special rates; of east-bound freights, not more than 8 or 8½ per cent. is above special or fourth-class tonnage.

Question 2. In order that grain and provisions may move forward, what difference must generally exist between prices in New York and Chicago? In this connection please to explain the general bearing of such differences of prices, and also of freight-charges, upon the movement of commerce, illustrating the same by specific facts as to movements of grain which have come under your personal observation.

Answer. The movement of property from one point to another, whether from west to east, from south (cotton for example) to north or to Europe, from any point on the Atlantic or Pacific Coasts to Europe, or generally from points of production to points of distribution for consumption, is not necessarily controlled by an ever-existing margin of profit, apparent at the time of shipment. There are many reasons apart from a clearly-defined margin of profit which induce such shipment, among which may be named a prospective advance in values at the point of destination, a prospective advance in the cost of carriage, the ownership by the shipper of large amounts of property which cannot be sold at the place of shipment without causing a serious break in prices, &c.

In general, however, the ordinary movement is governed by prices current at the point of destination or consumption, and prices at the point of shipment adjust themselves to what the property will net, less a small margin of profit to the shipper.

It must not, however, be assumed that prices current in New York alone are to govern prices, say, at Chicago in the movement of property. A very large proportion of the eastern consuming points are supplied direct from Chicago or from interior western points.

This demand is governed largely by the cost of the same property at those interior eastern points if drawn from the large eastern distributing markets, say Boston, New York, Albany, Philadelphia, and Baltimore, and the cost of transportation and intermediate charges less when shipped direct from the West to the consuming points than if shipped to any of the seaboard cities named and then reshipped to the consumer. It follows that he can and does pay more for such supplies at the West, to be shipped

direct to him, than a merchant in any one of the great seaboard cities could afford to pay for shipment to those cities, thence to be distributed by the old methods.

Hence it is found that the supply trade for home consuming points at the principal eastern cities has largely declined within the last few years.

Taking the whole field of the trade into consideration, it is conceded that prices must, within a reasonably short time, adjust themselves to a substantially uniform basis; and if there be to-day a considerable demand for grain, provisions, or any other articles, in a given direction, such property will soon be found flowing in that direction until a surplus is accumulated, causing a decline there, or other points advance their values to divert or attract it. This applies to the foreign as well as to the home demand. It is not entirely true that purchasers of property for export are able at all times to dictate the prices they pay for it. If a reasonably fair prospect exists that it will be needed at the point to which they contemplate shipping it, and it is likely to be drawn from a given point, purchasers will be found at sellers' demands. The same forecast of probabilities is exercised by exporters, or those ordering property for export; and it not infrequently occurs that large shipments are made to foreign ports purchased at prices which show a positive loss on what the property could be sold for at the moment of its purchase in the port to which its shipment is designed. It is not an unusual occurrence for California wheat just shipped, or to be shipped, and which cannot arrive in London in from four to six months, to sell in that market at from one to three shillings per quarter more than the same property would bring if on the spot in London at the time. These, of course, are more or less speculative operations, and are frequently attended with disappointment as to results, but they are elements which enter largely into the adjustment of values, and in a multitude of ways affect the movements of all kinds of property.

Question 3. Statistics showing the growth of the shipment of grain and flour, also of cattle, hogs, provisions, and spirits, direct from interior points at the West to the East without passing through the markets of Chicago or of any of the lake ports. This may be accompanied by a statement showing the relative growth of the trade in these commodities at Chicago, and of the direct shipment of the same from interior points.

Answer. No record whatever is or can be kept of the actual sales of property in this city, nor is there in existence, so far as I am advised, any data by which the amount of shipments from interior western points to the East without being marketed in any of the lake ports can be determined. Taking Chicago as a basis for the calculation, I should estimate, and it is but an estimate founded on little more than a mere guess, that probably 10 to 12 *per cent. of the grain* movement from this city, 60 to 70 per cent. of flour, about 5 per cent. of the live stock, scarcely any of the provisions, and perhaps 15 to 20 per cent. of the spirits, pass through the city without sale here. Even if accurate figures could be obtained, which is impossible, of the through consignments, it would not furnish the data from which could be deduced the information desired, because very large amounts of such through consignments are sold and controlled in this city.

Question 4. How is this interior movement affected by high or low lake-freights?

Answer. Under the influence of high lake-freights it is undoubtedly accelerated, and under low lake-freights it is affected much less than would be supposed. The arrangements between connecting railway lines is such that joint tariffs are made for these through shipments which in a measure counteract the influence of the low water-rates; for instance, from a point, say, 100 to 150 miles inland, the railway-lines leading to this city will, from what are deemed reciprocal considerations, make a rate for property consigned through by which they abate a portion of their charges that would be exacted on the same property if consigned only to this city. This discrimination is deemed unjust to the commercial interests of Chicago, and also to the interests of those who would desire to avail themselves of the advantages of the water transportation.

Question 5. Have the various lines east of Chicago ever rigidly adhered to agreed rates; and about what is supposed to be the range of "cutting" when the roads pretend to be running on agreed rates? Please to mention each form of "cutting" and illustrate the same by one or two practical examples.

Answer. I am inclined to believe that very frequently within the past few years the published and agreed rates have been rigidly adhered to, not only from this city, but generally by the trunk-lines. At other times when the lines are working nominally in harmony, various forms of "cutting" have prevailed, sometimes by drawbacks, sometimes by an understood under-billing of the property; again, by some extra labor on the part of the railway-line in the mode of receiving or delivering the property; and still again, by a direct abatement of the freight-charge to the extent of two to five cents per hundred pounds. These latter forms, however, soon lead to a disruption of existing arrangements between the lines. It also occurs very frequently that an eastern line makes an abatement to a connecting western line in order to secure the business consigned through by that line, which is deemed necessary, perhaps, in order

to enable the western road to handle the property at all, on account of competition in other directions. At the present time the Baltimore and Ohio Railroad publicly advertise that on all shipments by that line for direct export an abatement of three and a half cents per hundred pounds will be made on Baltimore charges; this appears to be a direct cut on agreed rates for transportation. A few weeks since, owing to competition by way of the lake-route from Milwaukee to Grand Haven, and thence by the Detroit and Milwaukee Railway, (bankrupt,) a rate was made from Milwaukee to eastern points ten cents less per barrel on flour than from Chicago to the same points, the flour being brought through Chicago. This was a cut (by the Michigan Central and its connections) of the ten cents and whatever they had to allow the line from Milwaukee to Chicago on the agreed rates from Chicago. Whether or not the "pool" of eastern lines from this city shared this abatement the public are not advised.

An arrangement exists, as I am advised, between the Baltimore and Ohio and the Chicago and Alton Roads to this effect: The Chicago and Alton intersects with a branch of the Michigan Central at Joliet, some thirty miles from this city, and it has been the custom for several years to bill property eastward from Joliet via the Michigan Central at the same rates as from Chicago, the distance being practically the same. The freight on grain, by the Chicago and Alton, from points, say, 30 or more miles from Joliet, has been and is four cents per hundred pounds more to Chicago than to Joliet, so that by its Joliet connection the Michigan Central had four cents per hundred the advantage of other lines in competing for through business from south of Joliet, which, of course, secured a monopoly of it. The arrangement referred to is, that the Baltimore and Ohio, having to take the property at Chicago, allow, out of their portion of the through rate, four cents per hundred to the Chicago and Alton for bringing the property from Joliet to Chicago, which is practically a "cut" on the agreed rates from Chicago.

A standing "cut-rate" exists by all the lines, not against themselves, (for all agree to and act on it,) but against Chicago, on property shipped from points where competition is strong by lines not passing through this city, as, for instance, Minneapolis, Minn., during the season of lake navigation, and other points at all seasons. The distance by rail from Minneapolis to Duluth is only about half that to Chicago, and the line is very anxious for business. Water-rates from Duluth to eastern points are practically the same as from Chicago to such points; hence, in order to secure the transportation of the immense amount of flour manufactured at Minneapolis, the lines leading to this city must make a lower rate than they could do unless an allowance was made them from the established rates charged from Chicago eastward, and this is done. So, also, in regard to other points, notably Quincy, Rock Island, Peoria, and other points that have connections with railway-lines passing across the State of Illinois south of Chicago. All these cross-lines are bankrupt, and do business at rates far below those current on roads paying dividends to stockholders.

Question 6. Does not the lake and canal route practically regulate all-rail rates east of Chicago?

Answer. During the season of lake navigation, when lake-freights are low, it does, and low water-rates during summer, past or prospective, have a decided influence on rail-freights even in winter. When, however, lake-freights rule high, as in 1872 and 1873, the influence is much less, both means of transport having all they can do, the railway-lines being to a considerable extent able to dictate their own terms.

Question 7. Statistics of direct importation from foreign countries at Chicago and of direct shipments on through bills from Chicago to foreign countries, say for ten years.

Answer. In regard to importations at Chicago, there are not, to my knowledge, any statistics available, except as embraced in the statement below. The fire of 1871 destroyed all the records of this character in our custom-house, including those of that year previous to October 9. From other sources, but based upon custom-house returns prior to 1872 and since that year and including it, the following is the statement of values of duty-paying goods passed through the Chicago custom-house. It does not, however, embrace goods imported by Chicago merchants upon which duties are paid at the seaboard:

In 1869, total value	$933,205
In 1870, total value	1,113,464
In 1872, total value	2,114,764
In 1873, total value	3,699,852
In 1874, total value	3,281,355
In 1875, total value	3,844,384

There was in the three first amounts included coffee and tea, since free, of the following value:

1869	$294,724
1870	792,849
1872	117,167

Of dry-goods the following values are reported:

In 1869	$20,958
In 1870	34,302
In 1872	861,490
In 1873	1,811,992
In 1874	1,780,915
In 1875	2,074,906

Of direct exportations on bills issued in this city the following amounts in tons are reported for each of the years named:

	Tons.
In 1869	7,213
In 1870	17,921
In 1871	21,081
In 1872	177,953
In 1873	132,474
In 1874	113,778
In 1875	219,387

The above statement of exports does not include property shipped to Canada, but only such as is shipped to Europe; nor does it include such as is shipped from Chicago, consigned only to seaboard cities, for which ocean-freight arrangements are to be made at the seaboard. These are variously estimated in the earlier years at 40 to 50 per cent. of the direct shipments, and for, say, the last three years, at from 20 to 40 per cent. of the above amounts. These uncertain additional amounts are, of course, as much exports from this city as the others, as they are shipped with no other intention than that they shall go directly abroad. The value of the direct exports in 1875, 219,387 tons, was not less than $26,000,000.

Question 8. Please to describe the growth of the "through-billing" business from Chicago and from points west of Chicago to foreign countries. Is not this movement incidental to and the outgrowth of the fast-freight-car business?

Answer. There is very little of this business transacted from points west of Chicago; the proportion is so small as to render it scarcely worthy of note, and none of it is included in the statement above given.

The business was inaugurated in this city about 1865 or 1866, and was then confined mainly to flour and miscellaneous freight, to a great extent sent forward as experimental. As the provision trade in later years advanced in this city, it began to attract the attention of buyers in Great Britain, and direct orders began to appear for the purchase and shipment of such merchandise. Up to 1869, however, it was of limited proportions, the entire shipments of that year being less than 10,000 packages of all kinds of provisions. In 1874 this had grown to about 285,000 packages, and in 1875 to 409,059 packages of the various kinds of cattle and hog products. All the ocean steamer lines have now authorized agents in this city, who issue bills direct to the point of destination, either in Great Britain or on the Continent.

During the past year arrangements have been perfected for direct shipments from this city either by rail or lake and rail to Philadelphia, and thence by sailing-vessels to "Cork for orders," or to direct ports. These shipments in 1875 amounted to 1,289,918 bushels of grain, over half of which was shipped from this city by lake.

I am inclined to the opinion that the fast or through freight-car business is as much the outgrowth of the demand for through shipment as the converse of the proposition; each, however, makes the other desirable and are of mutual benefit, and without either the demand for one would be materially lessened. Nearly all the rolling freight billed through to foreign countries is shipped from this point by rail. In 1874, 29,097 pounds of flour and 272,071 bushels of grain were shipped by lake. In 1875, 20,500 pounds of flour and 910,155 bushels of grain were so shipped from this city, all of which was shipped from the eastern lake terminus by rail.

Question 9. During what period of the year 1875 were all published rates virtually abandoned as to both east and west bound freights?

Answer. On east-bound freights a very fair adherence to published or understood rates has been maintained from this city. It is thought, and charged by some of the lines, that cutting to the extent of 2½ to 5 cents per 100 pounds was practiced in a few cases, but published rates being very low, there was less disposition than usual either to seek or grant abatements. Since about the 1st of December, when the present arrangement was entered into, it is believed that on Chicago business rates have been rigidly adhered to.

During nearly all of the first eleven months of 1875 there was a general cutting on west-bound freights, and great irregularity prevailed, especially from New York and Boston, and it is stated on apparently good authority that even since the late "pooling" arrangement, "special" goods have been brought west at rates largely below the published tariffs.

Question 11. Please to explain the circumstances which led to the "pooling" of the California business, and the conditions of such "pooling."

Answer. As I understand it, the arrangement of course not being fully made known to the public, the competition for the freight obtainable at Omaha and Council Bluffs was so active that nominal rates were disregarded by all the lines running eastward, and the profit of the business so entirely disappeared that for the protection of themselves against each other, the three lines whose termini are at Council Bluffs and Chicago, viz, the Chicago and Northwestern, the Chicago, Rock Island and Pacific, and the Chicago, Burlington and Quincy, entered into an arrangement to pool their earnings from Omaha and Council Bluffs; not only the California trade, but all freights received at Council Bluffs. The basis I understand to be that each line credits to itself one-half its gross earnings from that point for operating expenses, the other half being credited to the "pooling account," which account of the several lines being consolidated is adjusted by equal division between the three lines.

Question 12. Do the Pennsylvania and Baltimore and Ohio Railroads refuse to allow fast-freight-line cars and cars of other roads to pass over their roads to Atlantic seaports, or do they allow them to run upon the payment of established freight rates, and with or without the car-mileage of one cent per mile?

Answer. The lines running from this city which connect with the Pennsylvania Railroad Company, viz, the Pittsburgh, Fort Wayne and Chicago, and the Pittsburgh, Cincinnati and Saint Louis Railways, each have fast-freight lines running over their roads, which are understood not to be owned by those companies; indeed, the Pittsburgh, Fort Wayne and Chicago is operated by the "Pennsylvania Company," as a distinct corporation from the road itself or its lessee; still other lines operate over it with more or less of independence, but in harmony with it. I think on both the Pittsburgh, Fort Wayne and Chicago, and the Pittsburgh, Cincinnati and Saint Louis Roads no other cars but those of the regular lines operating over them are allowed as a rule to be run, and I understood on the Baltimore and Ohio Railroad the company does all the business with its own stock, except perhaps in occasional cases in regard to the coal trade. The cars of western roads do not pass over either of these lines unless it be in special cases.

Question 13. Is it your opinion that the trunk lines from Chicago to the seaboard exercise a greater or less degree of control over freight rates than they did three years ago? In other words, do you think that the power of the roads to enter into combinations has been weakened by new elements of competition which have sprung up within the period mentioned?

Answer. I think the multiplication of avenues for transport, the lack of dividends to stockholders, and also the extremely low rates prevailing during the last two years on the lake and canal have weakened the power of the railroads to combine. The recent completion of the Baltimore and Ohio line to this city seems to have demonstrated that the introduction of a new competitor brings to the question more of complication and more of a disposition to act independently; but although it appears to be a somewhat uncomfortable rival, late developments indicate that it is by no means averse to co-operation in agreed rates. Its recent arrangement with the Erie Railway, forming a line to New York entirely independent of both the New York Central and the Pennsylvania Central, gives it great additional power for peace or war.

Other lines, mainly through Canada, are forming an independent through connection, and with increased and more varied interests it would seem that combinations are much less liable to be made effectual or lasting.

Question 14. What are the ordinary limitations to the discretionary powers accorded to fast-freight line and railroad agents and solicitors of traffic at Chicago, and what abuses detrimental to the true interests of commerce have sprung up in consequence of the exercise of these powers?

Answer. When the various trunk-lines are operating in harmony, the powers of the fast-freight lines do not extend to making special rates, but they must conform these to the established schedules. They of course have power to make contracts and agreements as to promptness of transport, and to press such inducements as they are able to present to shippers in various ways to secure patronage. These frequently amount to little beyond the benefits to be derived from importunity, and their own acquaintance and popularity; the question of dispatch has probably more to do with securing freight at such times than anything else. At times when rates are variable they frequently have power to secure the business within reasonable limits, and, by the various devices previously alluded to, make material abatements in rates.

The principal abuse of the system of multiplying agencies probably lies in the increased expenses of their salaries, office-expenses, advertising, &c. It seems a burdensome tax on the transportation interests to employ two or three men and offices to transact the business that could as well be done by one; which increased expense must be borne either by the stockholders of the line or by the shipper. There is also a conviction quite general that in respect to fast-freight lines owned by officers of the railway, but which are operated independently, that by the concurrence of those officers the more

profitable classes of freight are secured for the fast-freight lines, while the least desirable is passed over to the railway company, thus securing good dividends to the former and leaving the latter with little or none.

Question 15. Did the roads west of Chicago prorate with eastern roads, during the continuance of the railroad war, on the basis of war-rates, or did they maintain their usual charges independently of such rates?

Answer. I am advised that they did not prorate on the same basis that the eastern lines charged, but did make material abatements from their regular charges on through business.

Question 16. Do the Pennsylvania and Baltimore and Ohio Roads allow their cars to run west of Chicago with merchandise from the East, or do they generally transship into cars of western roads?

Answer. Both companies prefer to have goods transshipped, and generally it is transshipped; but with full car-loads for one point, especially if the shipper so desires, they will permit their cars to run through. Quite a considerable business is done in that way by both lines to Milwaukee and to some other prominent points; but the usual manner is to transship merchandise at Chicago.

Question 17. Please to state to what extent there has been a change in the mode of commerce at Chicago, and at points southwest of Chicago, from the shipment of grain and other products on account of the eastern dealers, to shipment on account of consignors at the West.

Answer. Until the past few years, say previous to about 1867, the grain and provision trade was mainly transacted either by shipments on account of western parties, (not producers,) or on account of parties in the larger eastern cities, say Buffalo, Albany, and New York, with a smaller business to Philadelphia, Baltimore, and Boston, together with orders for shipment to Canada. From these points local dealers throughout the East supplied themselves for home consumption. Since about the year named (1867) the local dealers at the East have been increasing their orders direct to western points, until now probably full three-quarters of that trade is carried on by orders direct to the West, or consignments to those points, for sale on western dealers' account; so that the trade in western products at Albany is nearly abandoned, that at Buffalo reduced to insignificant proportions, and that at other prominent eastern points has been very greatly diminished. Shipments of grain and flour on account of this trade are made largely by rail in through-line cars, and a large amount of it is drawn directly from interior points, thus saving the handling charges at the lake cities. A large amount, however, is shipped by lake to Buffalo or Erie, and from thence distributed by rail. It not unfrequently occurs that a vessel cargo of grain shipped from this city to Buffalo will contain consignments, all mixed together in bulk, for twenty or more parties in as many different eastern cities and towns, to be divided and reshipped at Buffalo by rail.

This subject is treated also in answer to interrogatory second. A very large proportion of the grain shipped for this local trade is either purchased on orders by or shipped for account of Chicago merchants, even though the property itself does not come within a hundred or more miles of this city.

When it is known that grain is to be moved from one given point to another given point, the cheapest means are employed to do it, irrespective of any favoritism for lines running through this city. This business has been greatly facilitated by the establishment of through lines of cars.

Question 18. Statistics, or other facts, showing that during the last ten years the wholesale business of Chicago has increased faster than the wholesale business of eastern cities, with that section of the country within the limits of the wholesale trade of Chicago.

Answer. It is greatly to be regretted that on a subject so replete with interest as this, no reliable data are available upon which to base a satisfactory statement. The fact of an enormous increase of the wholesale business of this city is obvious to all who have given to the subject even the slightest attention. About ten years ago western merchants from all important towns and cities at the West, visited the East at least semi-annually, for the purpose of replenishing their stocks. Now such visits are rare, as full stocks and as favorable terms are presented here, and the business of the merchants at the smaller towns at the West has been gradually transferred from the eastern cities to Chicago. The wholesale trade of Chicago amounts, exclusive of the products of western agriculture, to not less than $350,000,000 annually, and its trade with points west of the Missouri River is to-day larger than its entire wholesale trade twelve years ago.

An indication illustrative of the importance of this city as a jobbing point, is found in the large increase of agencies of manufactures at the East, and of old established wholesale houses in New York. In short, the whole aspect of the trade has been transformed since, say, 1863 to 1865, and great as has been the growth of the city in respect to its trade in the products of the farm, it has been scarcely less so in respect to its trade in the various classes of manufactured goods.

Question 19. Please to prepare a schedule indicating the number of lines all-rail rail and water, and all water from Chicago to Montreal, to Boston, and to New York respectively, and the number of rail lines or combinations of rail lines to Philadelphia and Baltimore respectively.

Answer. *First*, as to railways; commencing on the north.

1. The Michigan Central Railroad from Chicago to Detroit Junction, near Detroit, Michigan, connecting at that point with the Grand Trunk Railway of Canada, crossing the Detroit River by ferry at Port Huron, thence to Montreal and Portland by an unbroken line. Distances: Chicago to Detroit Junction, 281 miles; Detroit Junction to Portland, 861 miles. Total all-rail Chicago to Portland, 1,142 miles. Chicago to Montreal, 842 miles; Chicago to Boston via Portland, 1,250 miles.

This line also connects at Prescott, Ca., and Ogdensburgh, N. Y., with the Vermont Central Railroad for all points in New England west of Maine. Distances: Chicago to Prescott, 733 miles; Prescott via Ogdensburgh to Saint Albans, 143 miles; Saint Albans to Bellows Falls, 153 miles; Bellows Falls via Fitchburgh to Boston, 114 miles. Total Chicago to Boston, 1,143 miles. The line also has an independent connection to Buffalo, N. Y., connecting there with the New York Central, Erie and Buffalo, New York and Philadelphia lines. Distances: Chicago to Detroit Junction, 281 miles; Detroit Junction to Buffalo via Stratford, Brantford, Port Colborne, and the International Bridge, 255 miles; Chicago to New York via Erie Railway, 958 miles; Chicago to Philadelphia, 956 miles. The Grand Trunk lines, although running their cars from Chicago over the Michigan Central Railroad, in a large measure manages its business as an independent line, and to some extent makes its own rates to all Canadian and New England points. It does not make much effort for New York or Philadelphia business, but has done some New York business via the New England roads and Ogdensburgh.

2. Michigan Central Railroad to Detroit, crossing the river at that point and connecting with the Great Western Railway of Canada for Suspension Bridge, there connecting with the New York Central for New England points and New York, and with the Erie Railway for New York and Philadelphia via Lehigh Valley Railroad from Waverly. Distances: Chicago to Suspension Bridge, 513 miles; Suspension Bridge to New York, 409 miles, and to Boston, 507 miles; Suspension Bridge to New York, via Erie, 443 miles, and to Philadelphia, via Waverly, 428 miles. Totals, Chicago to Boston, 1,020 miles; Chicago to New York, via New York Central, 962 miles; via Erie, 956 miles; Chicago via Waverly to Philadelphia, 941 miles.

A very large business is done by this line to Boston and New England, and considerable to New York and Philadelphia.

3. Michigan Central Railroad to Detroit, thence via Amherstburgh to the Canada Southern Railway, and by it to Buffalo, there connecting mainly with the New York Central, but incidentally with other lines centering at Buffalo. Distances: Chicago to Buffalo, 536 miles. Chicago to New York, 976 miles. Chicago to Boston, 1,034 miles.

4. Lake Shore and Michigan Southern Railway, Chicago to Buffalo, and thence by the New York Central and its connections. This line is operated largely in the interest of the New York Central, but makes connections and through rates via other roads debouching from its line, as, for instance, at Detroit, with the Grand Trunk of Canada; at Cleveland, with the Cleveland and Pittsburgh and other roads; at Erie, with the Philadelphia and Erie, and at Dunkirk and Buffalo, with the Erie Railway. Distances: Chicago to Detroit, 284 miles; Chicago to Buffalo, 539 miles; Chicago to New York, via Albany, 979 miles; Chicago to Boston, 1,037 miles; Chicago to Philadelphia, via Erie, 899 miles; Chicago to Baltimore, via Erie, 877 miles.

5. Pittsburgh, Fort Wayne and Chicago Railway: Chicago to Pittsburgh, thence by Pennsylvania Central to Philadelphia, New York, Baltimore, or Washington. This line is operated by the "Pennsylvania Company," and in entire harmony with the Pennsylvania Central Railroad Company. Distances: Chicago to Pittsburgh, 468 miles; Chicago to Philadelphia, 822 miles; Chicago to New York, 912 miles; Chicago to Baltimore, via Harrisburgh, 800 miles.

6. Pittsburgh, Cincinnati and Saint Louis Railway: Chicago to Columbus, Ohio, via Logansport, Ind., and thence to Pittsburgh, connecting there with the Pennsylvania Central. This line is also operated by the Pennsylvania Company; and although its business is managed separately, it may be considered as practically the same line as the Pittsburgh, Fort Wayne and Chicago, in so far as the business of Chicago is concerned. Distances: Chicago to Columbus, 314 miles; Chicago to Pittsburgh, 507 miles; Chicago to Philadelphia, 861 miles; to New York, 951 miles; to Baltimore, via Harrisburgh, 839 miles. This line also does a considerable business to New York by the Erie and Pacific Dispatch fast-freight line, over the Atlantic and Great Western and Erie Railways. Distances: Chicago to Urbana, Ohio, 267 miles; Urbana to Salamanca, 353 miles; Salamanca to New York, 413 miles; Chicago to New York, 1,033 miles.

7. Baltimore and Ohio Railroad: Chicago to Baltimore and Washington, connecting at Baltimore with the Philadelphia, Wilmington and Baltimore Railroad for Philadelphia, and thence to New York by the Pennsylvania Railroad. This line is the only

one having a continuous or unbroken management between Chicago and the seaboard. Distances: Chicago to Baltimore, 840 miles; Chicago to Philadelphia, 938 miles; Chicago to New York, 1,028 miles.

This line has also a more direct route to New York, operated as the Erie and Chicago line, connecting at Shelby Junction, Ohio, with the Cleveland, Columbus, Cincinnati and Indianapolis Railway, and thence via Cleveland and the Atlantic and Great Western Railway to Salamanca, there connecting with the Erie Railway for New York. Distances: Chicago to Shelby Junction, 286 miles; Shelby Junction to Salamanca, 280 miles; Salamanca to New York, 413 miles; Chicago to New York, 979 miles.

A special freight line is also operated between Chicago and New England points via the Hoosac Tunnel and the Fitchburgh Railroad, leaving the New York Central at Troy. Distance: Chicago to Boston via Michigan Central Railway, New York Central, and Fitchburgh Railroads, 1,009 miles. This line, although operated in harmony with the other lines to Troy, is supposed to be controlled by the Fitchburgh Railroad in opposition to the Boston and Albany.

Recapitulation of distances from Chicago.

	Miles.
To Montreal:	
Via Michigan Central and Grand Trunk Railroads	842
To Portland:	
Via Michigan Central and Grand Trunk	1,142
To Boston:	
Via Michigan Central and Grand Trunk via Portland	1,250
Via Michigan Central and Grand Trunk and Vermont Central	1,143
Via Michigan Central, Great Western, New York Central, and Boston and Albany	1,020
Via Michigan Central, Canada Southern, New York Central, and Boston and Albany	1,034
Via Lake Shore and Michigan Southern Railway, New York Central, and Boston and Albany	1,037
Via Michigan Central, Great Western of Canada, New York Central, and Fitchburgh Railroad	1,009
To New York:	
Via Michigan Central, Grand Trunk, and Erie Railway	958
Via Michigan Central, Great Western, and New York Central	962
Via Michigan Central, Great Western, and Erie	956
Via Michigan Central, Canada Southern, and New York Central	976
Via Lake Shore and Michigan Southern Railway and New York Central	979
Via Pittsburgh, Fort Wayne and Chicago Railway and Pennsylvania Central	912
Via Pittsburgh, Cincinnati and Saint Louis Railway and Pennsylvania Central	951
Via Pittsburgh, Cincinnati and Saint Louis Railway, Atlantic and Great Western, and Erie	1,033
Via Baltimore and Ohio Railroad, Philadelphia, Wilmington and Baltimore, and Pennsylvania Central	1,028
Via Baltimore and Ohio Railroad and Erie, (Erie and Chicago line)	979
To Philadelphia:	
Via Michigan Central, Grand Trunk, and Erie via Waverly	941
Via Lake Shore and Michigan Southern Railway and Philadelphia and Erie	899
Via Michigan Central, Grand Trunk, and Buffalo, New York, and Philadelphia	956
Via Pittsburgh, Fort Wayne and Chicago and Pennsylvania Central	822
Via Pittsburgh, Cincinnati and Saint Louis and Pennsylvania Central	861
Via Baltimore and Ohio, and Philadelphia, Wilmington and Baltimore	938
To Baltimore:	
Via Lake Shore and Michigan Southern, Philadelphia and Erie, and Northern Central	877
Via Pittsburgh, Fort Wayne and Chicago, Pennsylvania Central, and Northern Central	800
Via Pittsburgh, Chicago and Saint Louis, Pennsylvania Central, and Northern Central	839
Via Baltimore and Ohio Railroad	840

Second. As to water and rail and all-water routes.

1. Northern Transportation Company: Steam propellers Chicago to Ogdensburgh, thence by Vermont Central Railroad to all New England points, making through rates usually a trifle under those by all rail to same points.

2. Chicago, Sarnia and Grand Trunk Line: Steam propellers Chicago to Port Sarnia, *Canada;* thence by Grand Trunk Railway to all points in Canada and New England.

and also via Buffalo to New York. The line also connects at Prescott and Ogdensburgh with the Vermont Central and other New England roads, and by the main line reaches Portland direct.

3. The Western Transportation Company: Steam propellers Chicago to Buffalo, thence by New York Central Railroad to New England via Albany, and to New York direct.

4. The Union Steamboat Company: Steam propellers Chicago to Buffalo, thence by Erie Railway to New York, and via Waverly and the Lehigh Valley Railroad to Philadelphia.

5. Anchor Line: Steam propellers to Erie, Pa.; thence by Philadelphia and Erie and Pennsylvania Central to Philadelphia, and to Baltimore via Harrisburgh, with some business to New York via Philadelphia. Large quantities of property are shipped hence to Buffalo by this line, but it does not make through rates for such beyond Buffalo.

6. Sailing-vessels, and occasional steam-propellers, many of which tow from one to three large barges from Chicago to all points on the Lakes and to Montreal, via the Welland Canal and the Saint Lawrence River. Connections are made at Collingwood, Goderich, and Port Sarnia, Canada, and at Erie, Pa., Buffalo and Ogdensburgh, N. Y., with railway lines for all eastern points, and in some cases through rates are made, but as a general rule freight rates are made only to the terminus of the lake route. Vessels also connect at Buffalo and Oswego, N. Y., with the Erie Canal, and at Kingston, Canada, with lines of barges via the Saint Lawrence River for Montreal, and thence by steamers and sailing-vessels for Europe.

The system of transporting grain on the lakes by barges towed by steamers, themselves carrying a cargo, has grown up within a few years, and has proved to be eminently satisfactory and much the most economical means of transport. In this way one steamer and consorts frequently transport from 200,000 to 250,000 bushels of grain, with but little more expense than a single vessel would require in the way of seamen and other employés. Experience has demonstrated that such tows are but little if any more liable to disaster than single vessels, and insurance rates on hulls and cargoes are about the same as for ordinary sailing-vessels. This mode of transport is rapidly increasing, and it would seem to put at rest all apprehensions of future exorbitant lake freights.

Question 20. Please to prepare a schedule showing the prevailing rates each week, from January 1, 1876, for the transport of grain from Chicago to New York by all-rail, lake and rail, and lake and canal.

Answer. The schedule referred to is annexed hereunto. The rates given are as nearly accurate for general business as I am able to procure; so large an amount has been taken on private terms that it is quite difficult to arrive at perfect accuracy. The all-rail rate given is what may be called the public rate; there has been some cutting even of this low rate. I am credibly informed that considerable quantities in large lots have been taken at 15 cents per 100 pounds, and some two to three hundred thousand bushels have been taken at 14 cents per 100 pounds, or $10\frac{5}{10}$ cents per bushel on wheat and 9.84 cents on corn. The schedule embraces only actual freight charges. In the case of "all-rail" this embraces all charges from delivery on board cars at Chicago to delivery to consignee afloat in the harbor of New York; quantities are not guaranteed by all-rail, but are by the other two modes of transport. That loss is variable and difficult to estimate by average, assuming it to be 1 per cent., which will not probably be far from correct, it would be about 1 cent per bushel on wheat and ¼ cent per bushel on corn. There is also a charge at Chicago for car switching and trimming of $3 per car, or say about ¼ of a cent per bushel; by lake and rail, and by lake and canal, there is marine insurance ranging from 20 to 30 cents per $100 up to this date, or say an average of ¼ of a cent per bushel on wheat, and ⅛ of a cent on corn. On that by lake and canal there is also a charge for elevating in Buffalo and fire insurance—¼ of a cent for the former and a trifle for the latter, say 1 cent per bushel for both. By lake and rail these items are included in the through-freight rate, so that to the rate given in the schedule should be added, as proper items of transport by all-rail, on wheat, 1¼ cents per bushel; on corn, 1¼ cents per bushel; by lake and rail, on wheat, ¼ cent per bushel; on corn, ⅛ cent per bushel; by lake and canal, on wheat, 1¼ cents per bushel; on corn, 1⅛ cents per bushel.

Question 21. Please to state the general average of time for the transportation of grain from Chicago to New York by lake and canal, lake and rail, and by all rail.

Answer. By lake (sail) and canal there is a pretty wide range, say from fourteen to twenty days; a fair average, taking times and number of passages into consideration, would probably be about sixteen days. By lake (steam) and rail the average is about ten and a half days; by all rail, about five and a half days. All these times contemplate from the starting at Chicago to the time the property is ready for delivery in New York. Including the loading at Chicago one more should be added to each.

Question 22. Does the fact that the Pennsylvania Railroad Company and the Baltimore and Ohio Railroad Company are able to make their own east-bound rates from Chicago work prejudicially in any way to the interests of the Erie Road, the New

York Central Road, and the Grand Trunk Road; or, in other words, does such power exercised by the first two roads mentioned give them any advantages in the contest for east-bound business?

Answer. I think not; as compared with the New York Central, the management of that line being substantially the same as its principal connection to Chicago, the Lake Shore and Michigan Southern Railway makes it practically a continuous line, and, I think, may be considered as having all the advantages of the two roads named. As regards the Erie, I think it does labor under some disadvantages in this respect. It must, of course, secure the co-operation of its connections or accept the entire cost of any through abatement it may make. I think there have been cuts made by the other lines that the Erie agents were not authorized to meet, at least with promptness. The Grand Trunk labors under the same disadvantages, and is, perhaps, even more hampered by its connection with the Michigan Central. It is understood, and I doubt not correctly, that the Grand Trunk agents, while perhaps acting with as much independence as those of any line, are frequently obliged to assume the whole of any abatement made by them from agreed *pro rata* rates; that is, the Michigan Central Railroad collects its full *pro rata*, throwing the whole abatement on the Grand Trunk.

Question 23. Please to prepare statements showing respectively the total cost of moving grain from Chicago elevator to Liverpool via Baltimore, Philadelphia, New York, Boston, and Montreal, specifying in each case the drawback made.

Answer. The figures given below apply to wheat only; on corn the charges in some of the items would be a trifle less; others would be the same.

1st. Via Baltimore; rail from Chicago:

	Cents per bushel.
Storage, 2 cents; switching, trimming, and inspection, ¾ cents	2.75
Railroad freight, say 17½ cents per 100 pounds	10.50
Loss by shortage, say 1 per cent. on $1 per bushel value	1.00
Commission for forwarding at Baltimore	0.50
Total to vessel at Baltimore, currency	14.75
Equal in gold at $1.10	13.41
Ocean freight, say	18.00
Primage and sea damage not covered by insurance, say	1.00
Marine insurance, say	1.75
Total in cents per bushel, gold, Chicago to Liverpool, afloat	34.16

2d. Via Philadelphia; rail from Chicago:

Storage, 2 cents; switching, trimming, and inspection, ¾ cents	2.75
Railroad freight, 18 cents per 100 pounds	10.80
Loss by shortage, say 1 per cent. on $1 per bushel value	1.00
Commission for forwarding at Philadelphia	.50
Total to vessel at Philadelphia	15.05
Equal in gold at $1.10	13.68
Ocean freights, say	18.00
Primage and sea damage not covered by insurance, say	1.00
Marine insurance, say	1.60
Total in cents per bushel, gold, Chicago to Liverpool, afloat	34.28

3d. Via Boston: I do not know of any perfected arrangements via Boston except on through bills of lading.

4th. Via New York; all rail from Chicago:

Storage, 2 cents; switching, trimming, and inspection, ¾	2.75
Railroad freight, 20 cents per 100 pounds	12.00
Loss by shortage, say 1 per cent. on $1 per bushel value	1.00
Expenses in New York, including delivery to vessel and commission for forwarding	1.25
Total to vessel at New York, currency	17.00
Equal in gold at $1.10	15.45
Ocean freight, say	17.00
Primage and sea damage not covered by insurance, say	1.00
Marine insurance, say	1.50
Total in cents per bushel, gold, Chicago to Liverpool, afloat	34.95

If shipped from Chicago by lake (sail) and canal, and assuming freights at 9 cents per bushel, there would be a saving of about 3¼ cents per bushel made up a follows:

Saving in switching and trimming, ¾ cents; freight, 3 cents; loss in transit to New York, 1 cent	4.75
Less additional cost: Buffalo charges, 1 cent; lake insurance, ¼	1.25
Net saving	3.50

5th. Via Montreal; lake to Kingston and thence to Montreal and steamer to Liverpool:

Storage and inspection at Chicago	2.05
Freight, Chicago to Kingston	6.25
Freight, Kingston to Montreal	3.50
Insurance, Chicago to Montreal	1.25
Charges at Montreal, transferring and commissions for forwarding	.75
Ocean freight, say	19.00
Primage and sea damage not covered by insurance	1.00
Marine insurance, (ocean)	2.50
Total in cents per bushel, gold, Chicago to Liverpool, afloat	36.30

The above is so nearly all gold that I have made no conversion of the currency part.

The current rates of freight on grain shipped on through bills of lading from Chicago to Liverpool have been lower than the same property could be shipped for without a through-contract. They have, however, fluctuated considerably, as shown by the statement below. The previous statements are based on an average rate of freight by ocean-steamer and a uniform rail-freight to the seaboard cities. I am not aware of any drawback that would be granted from the charges made in the previous statements.

Statement showing the actual contract-rates of freight by rail from Chicago to the seaboard, and thence by steamer to Liverpool, between January 1 and October 21, 1876

January, via Philadelphia	70¼	cents per 100 pounds.
January, via Baltimore	72@73	cents per 100 pounds.
February, via New York	69	cents per 100 pounds.
February, via Philadelphia	67	cents per 100 pounds.
February, via Baltimore	66	cents per 100 pounds.
February, via Portland	68	cents per 100 pounds.
March, via Philadelphia	63¼	cents per 100 pounds.
March, via Baltimore	66@67	cents per 100 pounds.
April, via New York	45	cents per 100 pounds.
April, via Philadelphia	40@52	cents per 100 pounds.
April, via Baltimore	41@55	cents per 100 pounds.
May, via Philadelphia	45	cents per 100 pounds
June, via New York	41@44	cents per 100 pounds.
June, via Philadelphia	44@48	cents per 100 pounds.
July, via New York	44	cents per 100 pounds.
July, via Philadelphia	45	cents per 100 pounds.
August, via New York	40¼	cents per 100 pounds.
August, via Philadelphia	47¼	cents per 100 pounds.
September, via New York	40¼	cents per 100 pounds.
September, via Philadelphia	47¼	cents per 100 pounds.
October, via New York	44	cents per 100 pounds.
October, via Philadelphia	51¼	cents per 100 pounds.

These rates show so much discrepancy that it is not of much value as comparison. In the *pro rata* between rail and ocean it is understood in some cases the New York route has made lower rates to New York than it would at the same time take New York consignments for; for instance, when they would not take New York consignments at less than 20 cents per 100 they have taken Liverpool consignments on which they got but 18 cents to New York.

The steamer shipments have been much less than the "Cork for orders" shipmen's. I have not taken those rates because there was nothing to compare them with, the other statements being made for Liverpool shipments only.

It is proper to say that owing to low rates made by other routes there has been scarcely any business done via Montreal in any form; not a single through-contract, and only one via Portland and two via Boston.

A part of the discrepencies in the through-contract rates as given may be accounted for by contracts within a given month by the various lines as noted, being made on different days, and sometimes they have charged more per 100 pounds on one kind of grain than on another.

Question 24. Do you think that the policy announced by Mr. Vanderbilt about the 1st of May last, that he should compel the Pennsylvania and Baltimore and Ohio Railroads to make equal rates to Baltimore and Philadelphia with those to New York from all important western points, is a tenable position, and do you think that commercially it is a sound one?

Answer. I am rather inclined to answer yes to both branches of the interrogatory, although it certainly admits of debate. Mr. Vanderbilt's shortest line to New York is 979 miles; by the competing lines the shortest distance to Philadelphia is 822 miles, and the shortest distance to Baltimore is 800 miles. The extreme of difference is 179 miles, or a trifle over 22 per cent. greater distance from Chicago to New York than to Baltimore. To offset this Mr. Vanderbilt's line is very much less expensive to operate, save in the item of fuel, than either of the others; its grades are much less, and its curves are few and less objectionable than his rivals. His line was much less expensive to build, assuming that both were built equally substantial, than either of his rivals. Of course this has no reference to the capitalization of either, and I presume it is true that if all the lines were to be constructed now at the cheapest possible rate, the Vanderbilt line could afford to do business over 979 miles as cheap or cheaper than his rivals could over 800 miles. I regard that as the only true basis by which to estimate the value of railway property; that is, what it would cost to duplicate it to-day. There are other elements entering into the conditions of the several lines that are very favorable to Vanderbilt's in comparison. For a large portion of their routes neither the Pennsylvania nor the Baltimore and Ohio have any considerable local business, except such as cannot afford to pay any but the lowest rates, while nearly the whole of the more northern route passes through territory furnishing a large local traffic of the most desirable character. The passenger traffic of the several lines is very largely in favor of that of Vanderbilt. All these advantages must very much more than offset the difference in the item of fuel, and I do not know of any other that is against the northern route.

As to whether the proposition is a sound one commercially for the Vanderbilt roads would, I think, depend altogether whether or not the enforcement of it eventually resulted in larger net earnings than the former allowance of difference in rates would do. That, time alone can determine, and it is not certain that it ever can be determined. The future may be so complicated with other influences that the exact results of the policy cannot be accurately deciphered. Mr. Garrett has, as he claims, in deference to the interests of Baltimore, insisted that the rate from this city shall be less than to Philadelphia, although his line is 18 miles longer to Baltimore than the Pennsylvania to Philadelphia. This, it seems to me, under the circumstances of the case, is a more extraordinary dictation than that proposed by Vanderbilt.

In this answer I have taken no account of the more expensive terminal arrangements at New York than at Philadelphia or Baltimore, nor of the superior facilities of the New York Central from Buffalo by reason of its four tracks, as all such advantages in competition inure to the benefit of their possessor, and are never likely to be accepted in a competition as decisive of comparitive rates, and that the relative disadvantages of one line over another must be borne by it and at its loss, if loss results therefrom.

Question 25. Do you think that the result of Mr. Vanderbilt's position, as stated in the previous inquiry, has been detrimental to the commercial interests of New York?

Answer. I do not see any reason for supposing that such would be or is the case, and I hardly see how the demand, if a concurrence is enforced, can work injuriously to New York. The indications, as I read them, point to a purpose on the part of Mr. Vanderbilt to control freight-rates irrespective of the competition of water-routes, or at least of the competition of the Erie Canal. Whether he will find it profitable to do so permanently is more than doubtful. In case that idea is abandoned—and so long as the Erie Canal exists New York will retain the advantages of the water-transportation—and whether rail-freights are high or low, if they are the same to New York as to Philadelphia or Baltimore, it would seem that such a policy could not operate against the interests of New York. The distribution of grain to the several cities with uniform freights to all the points, certainly must be more favorable to New York than it would be with, say, a 20-cent freight to New York and 16 or 18 to Philadelphia and Baltimore, or, on a higher basis, say 45 cents to the former and 40 to the latter, as in years past.

It is no doubt true that with high rail-freights New York has great advantages over the other two cities by reason of her water-routes; and the higher rail-freights are—with the discriminations in favor of Philadelphia and Baltimore, which have been more on high than on low rail-freights—the more she is put at a disadvantage in so far as the business done by rail is concerned. All things considered, it appears to me decidedly against the interest of New York to encourage railroad wars respecting freight-rates.

Question 26. What is meant by the expression "Chicago points?"

Answer. I think the term is used in different connections and indicating different

points. Usually as indicating points that have a uniform rate of freight with Chicago; again, as indicating points to which freights are regulated on the basis of the rate to Chicago, or that are controlled by the Chicago rate; and still, again, as indicating points that are reached through Chicago, or may be so reached.

Question 27. For the trade of what towns on the Missouri River, or in Northern Missouri, Kansas, or Nebraska, do the Chicago and Saint Louis roads actively compete? What roads are engaged in the contest?

Answer. As a rule, Chicago does not enter into very active competition for the grain trade of Missouri, except such as comes from points on railway lines directly connecting with the city. Competition is somewhat active on the line of the Missouri, Kansas and Texas Road, and at all points north and west of its line at which railway connections can be made direct to Chicago. No very large amount of grain is, however, received from Missouri at Chicago. A large and increasing business is done with Kansas, while the bulk of all farm-products from Nebraska are marketed in Chicago or further east. Live stock from all the above-indicated district and a much larger area of Missouri finds a market in Chicago. The live-stock trade from Texas, especially in cattle, is very largely done at Chicago. For the sale of merchandise, agricultural implements, and lumber, the trade of Chicago extends all over Missouri and Kansas, and largely into Texas and the Indian Territory. An exception to a large business should be made as to Southeastern Missouri, but even there more or less Chicago goods are sold.

As indicating the extent of the wheat movement to Saint Louis from the northern or spring-wheat sections, it may be noted that in 1875 the entire receipts of wheat by the Saint Louis, Kansas City and Northern Railroad, which is the most direct route to the spring-wheat sections, was only 653,411 bushels.

The principal roads engaged in the competition for Northern Missouri, Kansas, and Southern Nebraska business are the Chicago, Rock Island and Pacific, the Chicago, Burlington and Quincy, and the Chicago and Alton to Chicago, and the Saint Louis, Kansas City and Northern and the Missouri Pacific to Saint Louis. All these lines have connections ramifying all that portion of the country.

Question 28. Do you not think that the pool established from Chicago last spring was rather a short-sighted effort on the part of the managers of the Chicago roads, from the fact that there were so many outside competing lines which could easily defeat heir plan by offering lower rates and deflecting a very large amount of grain from them, and also from Chicago?

Answer. I presume this question relates to the pool broken up, not established, last spring. I certainly do think so, and I am surprised that such able railroad managers as Messrs. Vanderbilt, Scott, and Joy could have supposed, as they seem to have done, that by simply agreeing on an inflexible rule of charges from one point, they could maintain their share of the general business, not necessarily originating at that point, or for any considerable time maintain an arbitrary rate from that one point, *while at nearly all others competition was foot-loose.*

Question 29. Aside from cuts and incidental advantages which may present themselves in the course of a contest between all the roads between the West and the seaboard, is it not true that it is to the interest of all the western railroads centering in Chicago to bring produce to Chicago in order to obtain the longest haul, and do they not discriminate by means of local rates against the deflection of business from them to the East by the lines crossing them south of Chicago? And again, as to the trunk lines between Chicago and the seaboard. Is it not true that they are inclined to act in concert with the commercial interests of Chicago in causing grain from the Northwestern States to be brought to Chicago, or through Chicago, in order that they may also obtain the longest haul? Besides, does not the whole economy of car service tend in this same direction, where a road can haul the largest proportion possible of its cars through to one or both of its termini, the equipment of the road is utilized to its greatest extent, that is to say, cars make the fewest number of miles empty, and a larger proportion are kept in motion?

Answer. It is undoubtedly a logical conclusion that it is very much more profitable for any road doing a business on a *pro-rata* basis, provided that basis is at all profitable, to have the haul for the whole rather than a part of the line, and I presume all roads would discriminate against the shorter haul, unless by so doing they lose it altogether. The risk of losing the business, however, not infrequently compels a *pro-rata* rate as low or even lower on the short than on the through haul. No iron rule can be applied to the business of a road that comes in competition with other lines along its route; the principle of reciprocal business must enter into its arrangements to a greater or less extent. Rail-crossings are so numerous that, in many cases, if a road refused to take freight from another at a *pro-rata* rate it would be carried along to the next, or one that would, and this, operating in both directions, tends in large measure to destroy all arbitrary rates for both through and local business. I incline to the opinion that the managers of all lines having their terminus at Chicago would very willingly co-operate with the commercial interests of that city in efforts, by the adjust-

ment of tariffs, to as far as possible force freight to or through that city, and grant at least as favorable rates of freight for property consigned to or received at Chicago as to any other portion of their business; in fact would, of their own motion, give better rates, if possible, on account of the superior facilities for loading and unloading cars, and the large amount of business done, aside from the other consideration of the through haul. The question, however, does not present itself in the way of an option to them as to what rates they shall charge, but rather, will they take the intermediate business at a given rate or lose it? The last part of the question, however practical, is one that would require nice and elaborate calculations by an expert in railway-transportation details, even where all the conditions are fixed. In such a calculation, length of line, terminal and way facilities, and many other items must be considered. The relative profit on long or short hauls would vary with the rates of transportation; the higher the rate the more profitable would be the long as compared with the short. I do not see how a satisfactory and reliable solution of the problem could be arrived at, and in this view I find practical railway men fully concur.

Question 30. It has been stated that "the merchants of Saint Paul, Minneapolis, and Winona are more and more getting into the habit of making purchases east of Milwaukee and Chicago, believing that thereby they will obtain goods at lower rates, and getting at the same time the opportunity to make the eastern trip, as many of them consider it, without expense to themselves." I desire to obtain your opinion in this matter.

Answer. My own judgment is that the statement alluded to is very wide of the facts in the case, and in this I am fully borne out by intelligent wholesale merchants and jobbers in Chicago, whose opportunities for information on the subject are of the highest order. It is possibly true, but I doubt it, that, at the points named, more goods may be purchased at the East than formerly, but, if it is so, it is because they sell vastly more. The wholesale and jobbing trade of Chicago has increased within the past few years in a degree that has attracted more attention than perhaps any other branch of business, and a very large percentage of interior merchants who a few years since made the bulk of their purchases at the East now make them all at Chicago. Large manufacturing establishments at the East are rapidly locating agencies at Chicago, and the number of wholesale and jobbing houses in the city has largely increased, while the extent of business transacted by the older-established houses has much more than doubled since the fire of 1871. Goods of nearly all descriptions are sold here as low as in New York or any eastern market with freight added, and many cases as low as there without any freight-allowance. The stocks are as fresh, as large, and as desirable. Credits have been given for longer time, as a rule, at the East than at Chicago, and this fact has enabled Chicago merchants to compete on very favorable terms with other cities; short credits enable them to sell closer, but, what is better, enable them to retain the most prompt-paying customers; they much prefer a prompt payment to a trifling increase of profits. They are nearer to their customers than merchants at the East can be to the same parties, and are very much better posted as to their responsibility. It not unfrequently occurs, I am told, that Chicago merchants refuse to sell on credit to parties known or by them believed to be unworthy of the credit asked, when, at the same time, eastern merchants will and do extend all the credit asked for; so that, in large measure, the Chicago merchant has the pick of customers, and, with that advantage, does and can afford to sell at least as low as his competitor anywhere.

The recent establishment in Chicago of an immense house by A. T. Stewart & Co. points with such unerring certainty to the drift of the wholesale dry-goods business towards Chicago that elaborate discussion of the subject, so far as that line of trade is concerned, seems somewhat useless. This house does no retail business here as in New York, and receives its supplies direct from manufacturers in this country and by importation.

In many articles of groceries, especially teas, Chicago merchants have a large trade as far East as Pittsburgh, Pa., and Rochester, N. Y., and of nearly all the intervening territory. This feature of trade is nearly all of a growth within the past four or five years.

Question 31. Referring again to the matter of discriminations against Chicago last spring, please to state how the rates have settled down, and how the interests of Chicago are affected thereby at the present time.

Answer. Chicago has had no reason to complain of freight rates eastward since the disruption of the pool in April last.

Question 32. With respect to the transportation of what commodities, or classes of commodities, are the commercial interests of Chicago affected adversely or favorably by the rates which have prevailed during the present year between Saint Louis and Cincinnati and Atlantic seaboard cities, and also between Saint Louis and Cincinnati and points at the South?

Answer. Chicago being content with her own rates both east and south since April last, has not scarcely asked what rates prevailed at the points named. I presume they have been low; those eastward probably on the same basis as similar freights east-

ward from Chicago. I have an impression that rather lower relative rates westward have been made to Chicago than to either of the other cities named.

Question 33. What year, or about what years did the trunk railroads first begin the business of carrying grain from Chicago to New York by all rail during the winter season, and in what year did they first begin to compete for all-rail transportation during the summer season? What rates did they consider it was necessary for them to charge per hundred pounds in order to warrant them in engaging in that traffic?

Answer. In the winter of 1868–'69 there was considerable grain shipped by rail to New York. Previous to that, however, there had, for two or three years, been a considerable quantity, especially of corn and oats, shipped by rail to New England for local consumption. And during the war large amounts of grain were shipped by rail for the use of the Army to Baltimore and Washington. I think the winter of 1868–'69 may be stated as about the first of shipment by all rail to New York. The following summer large quantities of grain were taken to New York and other seaboard cities by all rail, and since then, or say since the winter of 1868–'69, the all-rail movement has been continuous. Freights from November 1, 1868 to April 1, 1869, were from 50 to 80 cents per 100 pounds, viz: November 1 to December 1, 75 cents; December 1 to February 1, 80 cents; February 1 to March 1, 60 to 75 cents on a declining scale; in March, 50 cents—5 cents per 100 pounds more was charged on grain in bulk than on regular fourth-class freight till March 1, 1869, and at intervals since, but usually the rate has been the same. The change in rates during the winter of 1868–'69 did not materially affect the current movement till the decline on the 1st of March to 50 cents, then the movement was largely increased, nearly 2,000,000 bushels being shipped by all rail in March—not all to New York, however. During the summer of 1869, all-rail freights to New York on grain were as follows: March 1 to June 12, 50 cents per 100 pounds; June 12 to October 11, 45 cents per 100 pounds; and then by gradual advances to 70 cents late in October. Forty-five cents per 100 pounds, was the lowest all-rail freight on grain or fourth-class that had ever been reached, up to June 12, 1869.

Question 34. Has not the business of pork-packing during the summer season been developed almost entirely by rail transport, both directly and indirectly—the effects of railroads being to promote uniformity of traffic throughout the year?

Answer. The business of summer pork-packing has grown up with the gradual increase of a demand for hog products in Europe, and experience has developed the fact that the summer-packed is nearly as acceptable there as that packed in the winter months. The development of rail transportation has not created this demand, and for many years, when the facilities in this respect were about equal to what they are now, and rates not so much higher as to make any perceptible difference in the aggregate result, no such traffic existed. The winter-packed meats were held here and largely moved to points of consumption in summer by rail. The summer packing has been more developed by an entirely new phase in the consumptive demand than by any increase in facilities for transportation. It is true, however, that this business could not be so profitably conducted, and, in fact, not at all at Chicago, without the aid of the rapid rail transport.

APPENDIX No. 5.

ANSWERS TO INQUIRIES IN RELATION TO COMMERCIAL MOVEMENTS TO AND FROM THE STATE OF IOWA, THE VARIOUS LINES OF TRANSPORT FROM THAT STATE TO SOUTHERN AND EASTERN MARKETS, STATE REGULATIONS OF FREIGHT-CHARGES ON RAILROADS AT THE WEST, AND THE GENERAL COURSE OF COMMERCE OF THE NORTHWESTERN STATES, BY COL. MILO SMITH, OF CLINTON, IOWA. 1876.

Question 1. Please to present statistics of the tonnage passing down the Mississippi River at each bridge, and statistics of the tonnage passing over each bridge at each railroad crossing below Saint Paul, Minn., and above Saint Louis.

Answer. The season of navigation for 1875 commenced April 5 and ended November 19, lasting 229 days.

The total tonnage of steamboats and barges employed in the transportation of freights passing the bridge at Dubuque was, of boat-measurement, 253,955 tons. Of this amount 100,000 tons stopped at Fulton, delivering at that point 70,000 tons (of 2,000 pounds) of grain and flour. The total amount passing the bridge at Clinton was 153,955 boat-tons. Of this amount 42,126 boat-tons stopped at Rock Island, leaving 111,829 boat-tons going to Saint Louis carrying 43,320 tons of merchandise, 88¼ per cent. of which was grain and flour.*

The tonnage (of 2,000 pounds) passing the Dubuque bridge during the season was 113,320 tons, of which 93¼ per cent. was grain and flour; passing the Clinton bridge, 58,320 tons; passing the Rock Island bridge, 43,320 tons; passing the Burlington bridge, 46,522 tons; this is a fair estimate of the river-tonnage.

The number of tons of freight passing east *over the bridges* across the Mississippi River is as follows:

At what point.	Total tonnage.	Grain and flour.	
		Per cent.	Tons.
Winona, estimated	75,000	75	60,000
La Crosse	326,330	75	244,744
Prairie Du Chien	270,560	75	202,920
Dubuque	220,000	75	165,000
Sabula	35,833	75	26,868
Clinton	495,000	75	371,250
Davenport	412,728	75	309,546
Burlington	312,295	60	195,177
Keokuk	19,653	85	16,705
Quincy	97,640	50	48,820
Hannibal	43,605	18¼	7,995
Louisiana	36,710	29	10,645
Total tons passing east	2,344,354		1,659,673

This does not embrace the 70,000 tons left by steamers at Fulton, and going east over the Chicago and Northwestern Railroad, consisting wholly of grain and flour, and all coming from west of the river, nor the amount left by steamers at Dubuque, Prairie du Chien, and La Crosse, or from points where there are no bridges.

It is safe to estimate that there is 300,000 tons of freight from points west of the Mississippi River which moves east by rail, and which does not pass over any of the bridges, making a total tonnage of 2,644,354 tons of east-bound freight from west of the river, of which at least 2,000,000 tons consisted of grain and flour.

The most important and valuable business on the river is the lumber business.

The total amount of manufactured lumber, shingles, laths, and logs coming into the Mississippi River from Minneapolis to the mouth of the Wisconsin River is fully 1,000,000,000 feet. About 550,000,000 feet pass the Dubuque bridge, about 500,000,000 feet pass the Clinton bridge, about 400,000,000 feet pass the Davenport bridge. All the

* The boat-ton is 100 cubic feet of space, and the merchandise-ton is 2,000 pounds *weight*. The two expressions are, threfore, entirely different.

logs are landed at and above Saint Louis and are manufactured into lumber. The product is sent east and west over the various lines of railroad. Some of the manufactured lumber, shingles, and lath are run farther down the river, but the greater part of it is consumed at the towns along the river below the mouth of the Wisconsin River from whence it is shipped east and west on the various lines of road crossing the river. The total amount of lumber, shingles, laths, and logs would equal 2,500,000 tons of freight, nearly all of which is towed by steamboats in rafts containing usually from 200,000 to 1,000,000 feet in each raft. The aggregate value of the logs and lumber sent down the Mississippi River and consumed every year is over $10,000,000, and is increasing year by year.

This is a business which cannot be done by rail. While the traffic in merchandise and farm-products is gradually seeking the railroad as a means of transport, the lumber business must always remain a river business.

Question 2. The proportion of first, second, third, and fourth class and special-class tonnage, both east and west bound, which crossed the Mississippi River during the present year?

Answer. None of the roads running west from Chicago keep a record of the different kinds of freight passing over their lines east or west.

From the best approximate estimate obtainable, it would appear that the proportion of first-class freights carried west *would be less than* 5 *per cent.*, and of all classified freights less than 15 per cent. All classified freights east-bound embrace but from 3 to 5 per cent. of the total movement.

Question 3. A statement in regard to the discriminations with respect to rates on the railroads of Iowa.

Answer. The accusations made against the railroads of Iowa are numerous. Many of them are true, and many are not true; but the charge of discrimination in all of its various forms has been used to create prejudice against the roads, and to induce the passage of the law of 1874. The friends of restrictive legislation assume that all discrimination is unjust, and should therefore be declared illegal. It will be conceded that much of the discrimination practiced by the roads is unjust, and in the end unprofitable to the roads, as it prevents the development of the country from which their business comes, and creates a feeling of hostility among the people. By such acts on the part of the railroad companies a strong public sentiment in favor of restrictive legislation was awakened. The practice prevailed on nearly or quite all the trunk roads of Iowa of printing and posting up a tariff of charges for the public, to be used for transient and small shippers, and at the same time special contracts were made with large and regular shippers at very much reduced rates. The railroads were accused of practicing this to such an extent as practically to drive small shippers out of the business, and to make the business along their line a monopoly in the hands of a few large operators.

They were also accused of shipping grain from interior points to Chicago for 15 cents per 100 pounds, and of charging 22 cents from the Mississippi River towns, 40 miles nearer Chicago, the former being competing points and the latter not. The Chicago and Northwestern Railroad charged $84 per car for lumber from Clinton to Dunlap, and only $45 per car to Council Bluffs, 48 miles farther, the latter point being a competing and the former a non-competing point. Another road was accused of carrying merchandise to Des Moines at a rate so much less than to the towns east of that point, that the merchants doing business in the smaller towns shipped their goods to Des Moines, and then back at the local rates, in order to save expense.

Such accusations were very numerous. The published rates of some of the trunk-lines of the State appear to indicate that the practice of charging the public more for shipping between interior towns of the State and the Mississippi River towns than between the same interior towns and Chicago was adopted as the rule of the roads.

This practice prevailed to a greater or less extent on all the roads of the State.

By an examination of the tariffs, herewith inclosed, marked "C" and "D," in force prior to the law of 1874, it will be seen that the local rates between certain interior points and the river exceeded the rates between Chicago and the same points. This, however, is only a discrimination against the local business, and in favor of the through or interstate business.

But discriminations were chiefly made under special contracts. Before the passage of the railroad-tariff law of 1874, so large a proportion of the business was done by special contracts that published tariffs on many of the roads afforded no guide as to the rates actually charged except to transient shippers. Since the passage of that law, the local rates in the State of Iowa have been more strictly adhered to. Inclosed herewith will be found joint and local tariffs of the various east and west and north and south trunk-lines, showing the present rates under the law and the rates prior to its passage. The real difference in these rates is not as much as appears upon the face of the tariffs, as prior to the passage of the law so much was done on special contract that no computation can be made as to the amount actually received by the roads. It was often the case that a radical defect in the published rates was cured by a special contract, and perhaps as often very great injustice was done to rival shippers or towns,

since it has been the universal practice of all the roads to make special rates for competing points, and to pay but little attention to published rates.

During the season of navigation, the Mississippi River is a competitor for certain kinds of freight. Then the roads so adjust their rates as to prevent the business stopping at the river, and make special contracts for freights accumulated at river points.

Question 4. A general statement of the railroad question of Iowa, in so far as it relates to State regulation of freight and passenger charges, and the nature and scope of the laws under which such regulations have been enforced.

Answer. All the railroads of Iowa are organized under a general incorporation act. The constitution of the State prohibits the granting of special charters, and consequently all the roads are subject to the same law, except such roads as have received land-grants.

It is held that in these cases there are special provisions which control the question of rates. The Chicago, Rock Island and Pacific Railroad, when asking for special legislation some years ago, entered into an agreement to abide by any regulations the State might make in regard to rates.

The four main trunk lines running east and west across the State of Iowa are land-grant roads, except eighty-two miles at the eastern end of the Chicago and Northwestern Railroad, from Clinton to Cedar Rapids.

These roads, directly or indirectly, control the entire railroad business of the State, and any rate of freight fixed for them, either voluntarily or by law, fixes the rate for all the others, both east and west, north and south.

In 1856, Congress conveyed to the State of Iowa a large grant of land for four lines of road across the State from the Mississippi to the Missouri River; one from Dubuque to Sioux City, (1,226,558.32 acres;) one from Sabula and Lyons (forfeited) to Council Bluffs; one from Davenport to Council Bluffs, (774,674.36 acres;) and one from Burlington to a point on the Missouri River near the mouth of the Platte River, (339,108.45 acres.) Three of these lines built according to the grant and saved their lands. The fourth (from Sabula and Lyons) forfeited theirs, and their portion was regranted to the Cedar Rapids and Missouri River Railroad, extending from Cedar Rapids to Council Bluffs, now a part of the Chicago and Northwestern Railroad. This grant covered 1,226,163 acres.

The act of the legislature accepting the trust and granting the land to the various lines was passed July 14, 1856, and took effect July 16, 1856, and in making the grant to these lines the legislature made the following provision, (section 1311 of the code and section 14 of the act, page 218 of the revision of 1860:) "Said railroad companies accepting the provisions of this act shall at all times be subject to such rules and regulations as may from time to time be enacted and provided for by the general assembly of Iowa, not inconsistent with the provisions of this act and the act of Congress making the grant."

It is understood that Judge Dillon, United States circuit judge, has decided, at the last term of his court, held in Des Moines, in May, 1875, in a case against the Chicago, Burlington and Quincy Railroad, now owning and operating the line from Burlington to the Missouri River, that this section compels all the land-grant roads to submit to any regulation made by the legislature for the government of such roads, and that the State has the inherent right to regulate the rates on all the roads of the State. An appeal has been taken to the United States Supreme Court, and the question is to be argued during the present month.

The legislature, in 1874, passed a railroad-tariff law, fixing maxima rates, (a copy of which I herewith inclose,) and also providing against discrimination. This law reduces the rates on local business (that is, business within the limits of the State) in some cases fully one-half, making the rates uniform for like distances on any part of the road, without reference to grades and curves. The rates are fixed at so much per hundred pounds, without reference to quantity. The effect of the law is to compel the roads to receive, way-bill, send, and deliver very many packages for one cent, two cents, &c., practically making them carry all small packages for nothing, the rate allowed not being sufficient to pay for the blanks.

The friends of the measure declare that they will correct this defect at the next session of the legislature by allowing the roads to charge twenty-five cents for any package, however small.

Some of the railroad companies, in order to partially make up the deficiency caused by the reduction of their local rates, have added largely to their through-charges, or charges on inter-State commerce, and in that way have more than made up their losses on the local business. The practical effect of the law is to give the people who do business within the State low rates, and those who ship out of the State higher rates. It has also had the effect of stimulating business within the State by enabling manufacturers of agricultural implements, lumber, &c., jobbers, and wholesale merchants to compete successfully with outside parties. It also enables the pork-packers to ship hogs to their places of business at much lower rates than before, as the roads have always heretofore charged very high rates on this class of business. As the case now stands, *it is not so* much a question between the roads and the people as between the two

classes of shippers. What the law takes off the local business, the roads add to the through-business.

Iowa having no market-town for her surplus products, the great bulk of it goes to Chicago and to points farther east, and, being inter-state commerce, the roads are enabled to this extent to protect themselves against the law.

The same rule, if applied in Illinois, would work entirely different results, as nearly all the business originating in that State ends at Chicago, and is therefore local business to the State, and is at the same time through-business, it being carried from the place of shipment to the end of the road; and while the local business of Iowa is but a small part of the business of any one of the trunk-lines running through the State, the local business of the roads in Illinois amounts to a very large proportion of their business.

By reference to copy of law, herewith inclosed, it will be found that maxima rates and prevention of unjust discrimination are both embraced within the scope of the law.

No road in the State is exempt from the operation of the law. They are all classified, but in some cases the rate allowed by the law is more than the rate charged by the roads. The fact that the law fixes the rates of one road from a competing point, is equivalent to fixing it on all roads competing for the same business. The law is designed to prevent unjust discrimination. As will be seen, it makes the rate according to distance.

The regulation of rates applying to all the roads, they are all affected alike. Regulating the local business does not necessarily work unjust discrimination. The roads having the power to raise and lower their rates on inter-State business at pleasure, they may so regulate those rates as to create unjust discrimination. There are various reasons assigned for the legislation of 1874 in reference to railroads, some members of the legislature assigning one reason and some another. Some of the reasons assigned were merely imaginary. Perhaps the strongest argument, and the one producing the greatest effect, was the practice of the roads in discriminating against the local business of the State, or charging as much and in many cases more to and from the interior points in the State to the Mississippi River as from the same points to Chicago, and in making a different classification for all kinds of grain on their local tariff from the one enforced on their joint tariffs.

Another ground of complaint was the charging of a less rate for long distances than for short distances, the former applying to competitive business and the latter to non-competitive business. This was practiced by all the roads.

Instances of this character were numberless. They characterized the rates on all the roads, and were claimed to be *prima-facie* evidence of unjust discrimination. Finally they were used with powerful effect against the roads.

The cry of "monopoly," together with the personal differences many of the members had to settle with the roads for real or fancied grievances, contributed to bring about the legislation of 1874. One illustration will serve to show to what extent personal prejudice against an employé of a road will influence legislation.

During the session of 1872, a member living on the line of one of the main roads was found to be strongly in favor of very stringent laws regulating the rates of railroads, and no argument that could be presented produced any effect. He was in favor of the strongest and most stringent measures possible, and nothing short of that would satisfy him. The discussion developed the fact that his reasons for desiring the legislation were that a telegraph operator in the employ of the company had treated him badly; that he had asked that the offending operator be discharged; that the officers of the company had declined compliance with the request, and he proposed to "get even with them" by passing a tariff law.

Again, very much of the contest was purely political. The cry of "anti-monopoly" was seized upon by politicians as a hobby upon which to gain political power.

There is much in the management of the roads that is censurable, much that has a tendency to create ill feeling, and much that does not bring to the roads any benefit to offset the injuries inflicted by them.

The discrimination against their local business shown in the published rates created a very strong feeling against the roads in the minds of local shippers, in connection with the fact that the published rate was disregarded and special contracts were made for the bulk of the business, leaving but a small fraction of the local business to go at published rates. The local business, being only from 15 to 25 per cent. of the whole, made but little difference in the total earnings.

If the local rates had been made to conform more nearly to the through-rates it would have relieved the roads from very much of the odium of unjust discrimination.

Another reason for the opposition to the roads is found in the fact that all the main trunk-lines of the State are controlled and managed outside of the State, by parties who have no interest in the State except to make what money they can out of the business. The proprietaries are looked upon as rich and powerful corporations that are making a large amount of money and charging more for doing the carrying-trade of the State than they are entitled to.

In many cases probably the desire to enact restrictive laws arose from the opinion that the authority of the State should be asserted in order to keep the railroads in check. Perhaps no two men who favor legislation would give the same reasons for their views.

The following facts indicate some of the defects of the present law:

It will be observed by an examination of the local tariff of the Chicago and Northwestern Railroad, which is plainer than any other, that under the law no allowance is made for difference in grades or curves, or for differences in the expenses of doing the business or the amount to be done. All the roads of the same class and all parts of them are placed on the same level. A rate that would be remunerative with full crops and low prices when the grain will not bear a high tariff, would be entirely inadequate for the roads when there is a short crop, and consequently high prices, and when the crop would bear a much higher rate.

The law allows the roads no discretion except as to keeping at or below the rates fixed, and while the rates may be remunerative this year, there is no certainty that they will be remunerative next year. Upon the failure of a crop the receipts of all the roads of the State might fall so far below their absolute requirements as to place them in danger of passing into the hands of receivers.

There is much more uncertainty about the amount of business a road can secure annually in an agricultural country than in any other. The failure of the grain-crop of Iowa would take away fully three-fourths of the freight business of all the railroads of the State. Again, under the law the rate is the same on the west end of the roads, where the country is rough and broken, the grades steep, and the curves sharp, as on the east end, where the country is comparatively level and the road straight.

On one portion of the road an engine will haul twice as many cars as on the other. On the western portions of the roads, there being much less business to be done than at the east, the cost of doing it is far greater.

The fact that under the law rates are made equal is in no respect detrimental to the interests of the people of the State except by giving the roads an excuse for raising their rates on the through or inter-State business, such business not subject to State legislation. Again, by the terms of the law it will be seen that all branch roads belonging to a trunk-line are placed in the same class as the main line without any reference to earnings, thus discriminating against a road merely on account of its ownership.

If a branch road earns less than $3,000 per mile and is operated by a separate company, it belongs to Class C; but if it is leased or operated by a road earning over $4,000 per mile, it is placed in Class A, thus discriminating against the roads which are able to operate these branches. In many cases branch roads have been built by local stockholders and leased to the trunk-lines for a percentage of the gross earnings. As soon as leased, however, the law reduces the rates, in many cases 50 per cent., thus discriminating not only against the lessor, but also against the lessees, *i. e.*, the local stockholders. There are a number of branch roads in the State which cannot, under the most favorable circumstances, pay any interest on the investment in them, and the reduction in rates made under the law, makes them practically worthless, and a burden even to the operators.

Again, the law places all roads earning over $4,000 per mile in the same class, without any reference to the capacity of the road, the cost of doing business over it, or the net earnings the owners are able to obtain from it.

One of the trunk-lines across the State can haul an average of fourteen cars to a train and earns $4,048 per mile; another can haul twenty cars with the same class of engines and earns $8,000 per mile. One loses money on all its Iowa lines, the other makes money, yet both are in the same class and have to do business at the same rate.

Another road, owned and operated entirely in this State, all its business being affected by the law and earning $4,300 per mile, is classed with one earning over $11,000 per mile, with only 20 per cent. of its business affected by the law.

The whole theory of the law is based upon gross earnings without any reference to net results. Examples of the kind just stated are numerous and show the danger of legislating without a knowledge of the subject at issue.

It is a fact that the law makes more unjust discriminations than the roads ever did.

Question 5. About what percentage of the total tonnage of the trunk-lines of Iowa is not subject to State regulation owing to the fact that the traffic comes under the designation of inter-State commerce?

Answer. In the absence of reliable statistics a strictly correct statement of percentage cannot be made. From the most reliable estimates furnished by the officers of the roads, the following statement would appear to be practically correct.

Over the Chicago, Burlington and Quincy Railroad, from 15 to 25 per cent. of the business is local and subject to regulation under the law. Over the Chicago, Rock Island and Pacific Railroad, from 20 to 25 per cent. of the business is local and subject to regulation under the law. Over the Chicago and Northwestern Railroad, from 23 to 27 per cent. is local and subject to regulation under the law. Over the Illinois Cen-

tral Railroad, from 15 to 25 per cent. is local and subject to regulation under the law. All other traffic over each of these lines being inter-State commerce, is not subject to State regulation.

Question 6. Upon what terms is California traffic pooled by the Chicago and Northwestern, the Chicago, Rock Island and Pacific, and the Chicago, Burlington and Quincy Railroads? Please furnish the freigh t tariffs, giving the "pool" rates during the last two years.

Answer. The California traffic from Chicago to Omaha is pooled between the Chicago and Northwestern, the Chicago, Rock Island and Pacific, and the Chicago, Burlington and Quincy Railroads as follows. Each company takes out 50 per cent. of its earnings on that business for expenses of the traffic. The balance is divided equally between the companies. Settlements are made monthly, and this arrangement applies to both east and west bound business.

The following are the published rates from Chicago to California per 100 punds:

	First class.	Second class.	Third class.	Fourth class.	A.	B.	C.	D.
Through	$5 00	$4 00	$3 00	$2 50	$2 25	$2 00	$1 75	$1 50
Pool proportion	74	59	44	37	33	29	25	22

The rates are the same from all points on the pool lines west of Chicago, and goods can only be shipped on through rates at the Mississippi River. From all points west of the river they are shipped at the local rates to Council Bluffs, and then at the local rates over the Union Pacific Railway.

Question 7. Which of the trunk-roads through Iowa, extending to Chicago, are joint owners of any fast-freight line in connection with railroads running east of Chicago?

Answer. The Chicago and Northwestern and the Chicago, Rock Island and Pacific Railways have an interest in the "Red Line." The Illinois Central, and the Chicago, Burlington and Quincy Railroads have no interest in any fast-freight line. Not over 5 per cent. of the produce that crosses the Mississippi goes in fast-freight-line cars. Fully 95 per cent. of all the east-bound tonnage from all points at and above Keokuk and below Saint Paul is shipped in local cars, and is unloaded in Chicago or Milwaukee.

Question 8. Is the business of all-rail shippers of produce from Iowa to Atlantic ports increasing, and is this all-rail business chiefly to interior points in the New England and other Atlantic States?

Answer. The business of all-rail shippers is slowly increasing. The bulk of the business of Iowa, shipped beyond Chicago, goes to interior points in the New England and other Atlantic States. The through-billing business to points east of Chicago has undoubtedly been stimulated by the fast-freight lines. Some of the trunk-lines running west from Chicago do not allow their cars to go east of Chicago with through freight, but prefer to transship into eastern cars at Chicago; while other lines in cases of emergency allow their cars to pass eastward with through freight.

Question 9. Upon what terms are the cars of the eastern roads allowed to run over the trunk-lines of the State of Iowa?

Answer. The cars of all roads are allowed to run to points in Iowa at the regular rates. The road owning the car is credited one cent per mile for the distance it runs on each road. Very few cars, except fast-freight-line cars, come west of the Mississippi River, except those belonging to the roads terminating at Chicago.

Question 10. Please to prepare tabular statements showing the number of miles owned and operated under lease or otherwise by the various trunk-lines of Iowa.

Answer. The number of miles of road owned and operated by the several companies is as follows:

	Owned.	Leased.	Operated.
	Miles.	*Miles.*	*Miles.*
Illinois Central Railroad	705	401	1,106
Chicago and Northwestern Railroad	1,415	433	1,848
Chicago, Rock Island and Pacific Railroad	922	46	968
Chicago, Burlington and Quincy Railroad	1,263	.....	1,263
Chicago, Milwaukee and Saint Paul Railroad	1,399	225	1,654

Question 11. Please to present such statistics as you may be able to procure showing the growth of business over the north and south roads of Iowa.

Answer. The business of all north and south roads in Iowa is practically east-bound business. The north and south roads carry their traffic to the main east and west

trunk-lines, and it passes over them to Chicago. There is practically no south-bound business. Nearly all the business of the Keokuk and Des Moines Railroad (striking the Mississippi River at Keokuk at the foot of the Lower Rapids) goes to Chicago. It is safe to calculate *that 95 per cent. of the business of Iowa goes to Chicago and Milwaukee.* While the business of the north and south lines may increase, it would not show an increase of south-bound business.

Question 12. Are any of the trunk-lines east of Chicago now making efforts to gain control of any of the lines west of Chicago, or to extend their own lines west? If such extension of any eastern line were made, would not such line be able to make discriminating rates as against lake and canal transport from Chicago or Milwaukee to New York?

Answer. If efforts are being made by any of the eastern roads to obtain control of any road west of Chicago, it is not known to me. All the efforts of this description are supposed to be made by individuals.

The efforts to extend some of the trunk-lines east of Chicago to the Mississippi River is by the construction of new lines, and not by getting control of any road now built. If a line should be extended from any of the trunk-lines to the Mississippi River without going through Chicago, it would create a competition between cities rather than between roads, but such extension would not enable a road to make any rates which would not come in direct competition with roads from the Mississippi River to Chicago and lake and canal navigation to New York. It would simply make one more competing line, and would give such company the advantage only of saving the cost of going through Chicago, which is estimated at five cents per bushel. There are roads of the description you name at Davenport, Keokuk, Burlington, Louisiana, and Hannibal, but they simply compete for the business just as the other roads do.

Question 13. Please to state the cost of each railroad-bridge over the Mississippi River below the Falls of Saint Anthony and above Saint Louis.

Answer. The cost of the several bridges over the Mississippi River is as follows:

At Hastings	
At Winona	$200,000
At La Crosse, (boat-crossing)	20,000
At Prairie Du Chien, (pile and boat)	120,000
At Dubuque	800,000
At Sabula, (temporary)	20,000
At Clinton	800,000
At Davenport, (wagon-bridge built conjointly by the Government and railroad company)	2,000,000
At Burlington	800,000
At Keokuk	800,000
At Quincy	1,500,000
At Hannibal	750,000
At Louisiana	800,000

Question 14. Please to state to what extent there has been a change in the mode of commerce at Chicago, and at points south and west of Chicago, from the shipment of grain and other products on account of western dealers to shipment on account of consignees, *i. e.*, the eastern purchaser.

Answer. The business of through shipment to eastern markets from south and west of Chicago is on the increase, and the sharp competition between the roads running from various points on the Mississippi River and passing south of Chicago has had a tendency to further increase the through shipments, and to a certain extent to change the mode of doing business. Formerly all the business went directly to Chicago, that being the market for all the surplus of Illinois and Iowa, but the building of new lines of roads passing south of that city has transferred much of the business to new channels, and has so alarmed the merchants of Chicago as to call for the appointment of a committee to investigate the charge of intentional discrimination against that city.

These lines can control the business during the close of navigation, but during lake and canal navigation the rates are so much less by Chicago that the great bulk of the business still seeks an outlet by the way of the lakes.

In all new sections the capital invested in the grain and produce business is comparatively small, and dealers are forced to sell in the nearest market, but as the country becomes older and the dealers are able to hold their grain for a better market and to wait longer for their returns, the shipments to eastern markets increase, and as the facilities for direct through shipments increase, the competition of transportation-lines makes low rates, increases the business, and creates a sharp competition between the various cities, both East and West. This state of things is plainly manifested now in the excitement at Chicago about the discrimination against that city by the "cut-off roads," as they are called, and it is undoubtedly true that these roads are now affecting the business of Chicago more than ever before.

Question 15. To what extent, and in what manner, do freight-rates on the Mississippi

River at and below Winona, Minn., regulate rail-rates east to the Atlantic seaboard cities?

Answer. The river-rates at and below Winona have very little influence on rates to the Atlantic cities. The shipments of grain to Atlantic seaboard cities from the Mississippi River is a very small per cent. of the east-bound business. While the river is navigable, the competition is carried on mainly by short lines of steamers running in connection with some one of the trunk-lines to Milwaukee or Chicago more than by through boats to the lower river, as you will see by the amount carried. For instance, during the season of 1875 a short line of steamboats and barges ran in connection with the Chicago and Northwestern Railway at Fulton, and brought to that point, from up the river, 2,000,000 bushels of wheat and 75,000 barrels of flour; and the same line delivered to the Rockford and Rock Island Railroad at Rock Island probably 15,000 tons of freight. All this business started from points above the Illinois Central and the Chicago, Milwaukee and Saint Paul Railways, which were competitors for the same business.

The season of navigation on the Mississippi River is about two hundred and twenty days, including the stage of low water when steamers cannot pass the rapids. A large portion of the freights from west of the river goes to market after the close of the river, and therefore not affected by the competition of the river.

Question 16. Please to give your opinion as to narrow-gauge railroads in the State of Iowa, and the circumstances which seem to point to the economy of such roads.

Answer. The matter of narrow-gauge roads has as yet hardly risen to the dignity of an experiment. We have but two short pieces of narrow-gauge road in operation. These are doing a small business and are operated very economically. They have not been in operation long enough or under such circumstances as to indicate what the result will be in an economical point of view. The claim made by the friends of the narrow-gauge system is, that by the reduction of dead weight they can carry freights and passengers much cheaper than the broad-gauge roads. It may turn out that in trying to save dead weight they have so lightened their stock that the cost of repairs will be fully equal to the difference saved in dead weight. But none of the narrow-gauge roads have yet reached the maximum of depreciation, and until the rapidity with which their stock wears out, bridges and ties decay, and iron requires renewal can be determined, no just comparison can be made between the two systems. The width of the gauge is not an essential element in the success of this class of roads, except in so far as it enables the builders to lighten their rolling-stock and to run sharper curves with safety.

A road built with a narrow road-bed, small ties, light iron, and correspondingly light rolling-stock, without any reference to the width of gauge, can be built so much cheaper than the present style of broad-guage roads that it requires comparatively a small investment of capital for construction, and a correspondingly small outlay to operate, so that such a road would be able to live and pay expenses upon a business that would not pay operating expenses on an ordinary 4-foot 8½-inch gauge.

No narrow-gauge road has yet been built in this country of sufficient length to determine what their relative capacity will be compared with the standard gauge, or to what extent a saving can be made in dead weight or in operating expenses. So far as the system has been tried it is claimed to be a success, and it is now in contemplation by parties intending to build a new road in the Northwest to adopt the same weight of material and rolling-stock as the narrow gauge and still use the wide gauge. If this road is built as contemplated, it will aid in determining whether the width of the gauge is an essential element of success.

Tonnage account, 1875, Keokuk Northern Line Packet Company, showing number of tons of freight carried down stream from Saint Paul and all points to all points to Saint Louis, Mo.

Destination, in divisions.	Flour.	Wheat.	Merchandise.	Total.
From Saint Paul to points to Rock Island and Davenport, inclusive.	8,408	29,871	5,041	43,320
Muscatine to points to Keokuk inclusive	342	1,374	1,486	3,202
Warsaw to points to Saint Louis inclusive	6,600	14,920	75,194	96,714
Total	15,350	46,165	81,721	143,236

SAINT LOUIS, MO., *February* 23, 1876.

The above table of tonnage is furnished by the Keokuk Northern Line Packet Company, representing their business for the year 1875, they being the only line of merchant-boats between Saint Louis and Saint Paul; all the other boats on the river being either short-line boats operated in connection with some railroad or raft-boats running logs and lumber.

APPENDIX No. 6.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF BOSTON, THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, AND THE TRANSPORTATION-LINES OF THE STATE OF MASSACHUSETTS, BY MR. HAMILTON A. HILL, OF BOSTON, MASS. 1876.

Question 1. What rebates are allowed the shippers of grain and flour at Boston in case such commodities are exported, and is such rebate made by the steamship companies, or by one or more railroad companies, and, if so, by what company or companies?

Answer. When the Cunard Steamship Company began, in 1871, to send its large propellers regularly every week from Boston to Liverpool direct, arrangements were entered into between it and the Boston and Albany Railroad Company, by which grain and other articles of western produce could be delivered in Liverpool by way of Boston, at as low rates as by the Grand Trunk route through Portland, and by the various trunk-lines to New York and thence to Liverpool.

These arrangements included a rebate on the railway rate of freight to Boston, and I understand that this has been made to the shipper by the railroad company.

During the last two or three years the steamships of the Dominion line, employed in the trade of the Saint Lawrence in the summer season, have been sailing between Boston and Liverpool, at frequent intervals in the late autumn, winter, and early spring. A new steam-line, owned by the Messrs. Leyland, of Liverpool, has made its appearance on this route the present spring. I have reason to believe that western produce shipped by both of these lines receives the benefit of the rebate precisely as if shipped by the Cunard line; and that the rebate is made on merchandise arriving in Boston by the other railroads terminating here, as well as by the Boston and Albany Railroad.

The sole object of this rebate has been and is to encourage the export of western produce from the port of Boston.

There is no "combination" between any of the railroad-lines and any of the foreign steamship companies coming to this port; only co-operation in a harmonious and friendly spirit for the benefit of all concerned, and for the good of the port.

Question 2. Has the Hoosac Tunnel route yet developed any increase in the grain business of Boston, and has the competition of this line tended to reduce the freight-charges on grain from the West to Boston?

Answer. The Hoosac Tunnel route has no facilities as yet for handling grain, and therefore there has been no competition on its part by which prices have been lowered. Two or three shipments of grain came to hand by it last winter, but none is arriving now.

Question 3. Please to state the following facts in regard to the coastwise steamer lines between Boston and New York, Boston and Philadelphia, and Boston and Baltimore respectively—

(*a*) For every one hundred tons of freight moved north, about how many tons of freight are moved south?

(*b*) Is it true that the tonnage of north-bound freights on each one of these lines being very much in excess of the tonnage carried south, they can afford to carry south-bound freights at very much lower rates than they must necessarily charge on their north-bound trips, and that by this means they are enabled to combine with the Erie and Pennsylvania Roads at New York, with the Pennsylvania Railroad at Philadelphia, and with the Baltimore and Ohio Railroad at Baltimore, for the transportation of Boston freight to the West, in competition with the direct rail-line composed of the Boston and Albany Railroad and its western connections, and the Vermont Central and Grand Trunk Line?

(*c*) Do you regard the transportation of freights westward by means of these coastwise steamer lines, in connection with the railroads west from New York, Philadelphia, and Baltimore, as affording a reliable and effective competition to the Boston and Albany and Central Vermont line?

(*d*) Is not the quantity of freight which can be shipped from Boston to the West on such lines necessarily limited by the average amount of available freight-space in the steamers bound south from Boston?

Answer. (*a*) For every one hundred tons of freight moved north by the three coastwise steamship lines, named in the inquiry, the number of tons moved south by each is reported to me as follows:

	Tons.
New York Metropolitan line	40
Philadelphia	66⅔
Baltimore	40

(*b*) The fact that the tendency of the traffic is mainly northward undoubtedly enters into the calculations of these lines, and of the railway companies with which they connect, in fixing their rates of transportation; but it should be remembered that by all-rail routes to the seaboard the bulk brought to the East considerably exceeds that carried to the West, and that a great many cars by these lines go back empty for the seaboard. I have always supposed that the Boston business being so much added to what may be called the natural traffic of the Erie, the Pennsylvania, and the Baltimore and Ohio Railroad, these companies have found it for their advantage to cultivate and encourage it by making liberal terms in connection with the coastwise steamship-lines respectively.

(*c*) These lines have undoubtedly been very useful to the business community in and about Boston, and they have been effective in keeping down the rates over the direct lines with which they have entered into competition. They occupy more time in transit, however, and they, of course, involve transshipment; so that freight requiring quick dispatch, and that which suffers from much handling, would usually be forwarded by the all-rail routes. By the Philadelphia and Baltimore lines, the shipper would also have to effect marine insurance.

(*d*) The capacity of these coastwise steamship lines is large, the vessels to New York going daily, to Baltimore three times a week, and to Philadelphia twice a week; their managers are enterprising; they add tonnage as it is needed, and they intend to keep apace with the times. I should say that the quantity of freight which can be shipped by them to the West is limited by the average amount of available freight-space which they have to provide for the business coming from the South and Southwest.

Question 4. Is cotton brought to Boston from the centers of production in the Gulf or other Southern States by rail, and to what extent?

Answer. Cotton has for some time past been coming to Boston from the sources of supply both by the all-rail routes and by the mixed routes referred to in inquiry No. 6. This trade is now considered as part of the regular and legitimate business of all these lines, and it is steadily increasing. I hear that bills of lading have been signed in Memphis for the conveyance of cotton from that city to Liverpool, by way of Boston, at five-eighths of a penny a pound, which is certainly very cheap. The advantages which these routes offer over the old water-route are great saving in time and approximate certainty as to date of delivery.

Question 5. Please to state the ocean rates during the year 1875 from Boston to Liverpool.

Answer. For the rates from Boston to Liverpool by steamer during the year 1875 see schedule marked "C." No shipments are made to Liverpool by sailing-ships, but such vessels are sometimes loaded to go to Cork for orders. The rates by them for grain, under ordinary circumstances, are from one penny to three halfpence a bushel less than by steamers. The insurance by them would usually be double what is charged for steamers.

Question 6. Are not the advantages of Boston in the transportation of New England manufactures to the West necessarily confined within certain geographical limits, beyond which goods would naturally be shipped to New York or to other points, even under the discriminating rates now prevailing in favor of Boston, the cost of transporting such goods to Boston and from thence to points at the West and South exceeding the cost of direct transport, or of transport to New York and thence to the South and West?

Answer. In my judgment, there is no reason why the domestic merchandise of New England should not be shipped direct to all points of distribution or places of consumption in the United States, wherever they may be. There is nothing gained, but additional cost is incurred in sending merchandise to New York, from thence to be forwarded to its ultimate destination.

About the year 1849 or 1850 the commission agents selling domestic dry-goods in Boston opened branch houses in New York to supply the trade there. This has since been regarded by most people as a very unfortunate step, as it was certainly an unnecessary one. This branch of business might have been retained in Boston, just as the wholesale boot and shoe trade has always been.

The effect of this step, so far as the future is concerned, may be modified by the fact that Chicago, Saint Louis, and other western cities have become very important points of distribution, and goods are now sent to those cities direct from the New England mills; but the injury sustained by Boston in its general business in consequence of

this diversion of a branch of its legitimate trade, the distribution of the products of its own mills, can never be wholly repaired.

Question 7. If such discrimination in favor of Boston as to west-bound movements should continue with respect to foreign merchandise, do you think that a very considerable amount of merchandise would be deflected from New York to Boston?

Answer. This discrimination has, no doubt, operated favorably for the wholesale West India goods trade of the city, but it probably has had no effect on the trade in foreign dry goods.

Question 8. Please to state as accurately as possible the territory of the New England States within which manufactured goods are chiefly marketed in Boston, and the area within which such commodities are chiefly marketed in New York.

Answer. Under the branch-house system, as it is called, to which I have alluded in my answer to inquiry No. 10, part of the goods made by all the larger manufacturing establishments in New England are marketed in New York.

I would say that most of the manufactured goods of Rhode Island, Connecticut, and Western Vermont go to New York; of the manufactured goods of Western Massachusetts, probably one-half at least go to New York, the rest coming to Boston; of the manufactured goods of Eastern Massachusetts, Maine, New Hampshire, and Eastern Vermont, I should say that the larger part finds a market in or through Boston, and the rest goes to New York.

Question 9. Is it your opinion that the discriminations as to west-bound freights in favor of Boston equal or exceed the commercial value of the discriminations against Boston and in favor of New York on east-bound traffic?

Answer. By no means. The disadvantage to Boston from the discrimination against it on eastward traffic is vastly in excess of the advantage received by it from favorable discriminations on freight bound to the West.

Question 10. Do you regard the discriminations against Boston with respect to east-bound freights, and in favor of Boston with respect to west-bound freights, as being simply the result of a contest between the various railroads, or as the result of a combination between such roads in carrying out what they deem to be a line of policy which best serves their own interests?

Answer. Undoubtedly all these questions of rates, involving more or less of discrimination in favor of or against particular cities, are generally settled by what is reported as conducive to the best interest of the railway companies.

It should be added, however, to this general statement, that the long outside lines consider that they have a right to quote a somewhat lower rate to shippers from Boston, because they could not secure the carrying of their goods unless they did so; they must convey the merchandise at less rates than the direct lines, so as to meet the disadvantages of longer time and more transshipments under which they rest.

For example, the Grand Trunk and Central Vermont line carries merchandise 5 cents per 100 pounds less than is charged under joint tariffs on the direct routes, believing that only in this way it can compete with them at all. Boston merchants feel that this line has been a very valuable one to the business interests of the city.

With regard to freight coming east to Boston, the New York Central Railroad Company must be regarded as the strong and regulating power, and the other lines consider it to be for their interest to come in by agreement to whatever it proposes and insists upon.

Question 11. Please to state as concisely as possible the main points involved in the contest now being carried on between the Grand Trunk, New York Central, Erie, Pennsylvania, and Baltimore and Ohio Railroads with respect to the Boston business, and state the terms upon which those roads have come to an agreement as to the differences existing between them.

Answer. The contest which you mention arose, as I understand, from the unwillingness of the New York Central and other lines to allow the Grand Trunk and Central Vermont line to charge less than themselves by 5 cents per 100 pounds on merchandise carried by it through Canada.

It has been said that in order to secure uniformity of rates on all the routes, the other lines interested offered to contribute to the Grand Trunk and Central Vermont line an amount which should be an equivalent for the value of the traffic which by this arrangement it would lose, but this offer was not accepted. On what terms the agreement finally entered into was based I am not informed, but this agreement has been of short duration, and a vigorous competition among the various lines seems to have commenced again. I am told that during the continuance of this agreement freight continued to go from Boston through Canada to the West, and I infer that the rates were made satisfactory to the shippers.

I am informed that the Baltimore and Ohio Railroad has also claimed the right to carry merchandise from Boston at rates below those charged by the direct line, and that the open rupture of a year and a half or two years ago was immediately produced by it contracting for freight from Boston to Chicago at 16 to 18 cents per 100 pounds. The Boston and Albany and New York Central line afterwards carried freight *from* Boston to Chicago at 15 cents per 100 pounds.

Question 11. Do you consider that the recent adjustment of west-bound rates abolishing the discriminations against New York to have been the result of the force of public opinion, or was it simply an agreement between the various roads in order to avert a railroad war?

Answer. The force of public opinion, as it found expression through the merchants and business-men of New York, undoubtedly hastened a settlement of the controversy, which, however, must have been terminated in some way before long, because of the loss to which it was subjecting the companies concerned in it.

Question 12. Is it not true that during the year 1875 the published freight tariffs afforded no indication whatever of the actual rates charged on west-bound traffic, and that during the greater part of that year utter demoralization existed as to competitive rates between the West and the seaboard?

Answer. That was the fact to a very considerable extent. I am told there was no prominent miller in the West who could not go to a railroad agent and make a private and special rate for his flour, a rate which often the consignee at the East was not aware of. The rates specified in bills of lading were no certain guide as to the amount actually paid. In such cases the rebates were paid to the consignor at the West. This state of things probably still continues.

Question 13. Please to refer to any branches of the commerce of Boston which have been deflected from that city to New York, or to other points, in consequence of discrimination made by railroad companies.

Answer. The general export-trade from Boston to Europe has suffered severely from the lower rate charged on flour, grain, and other western products, to New York, as compared with Boston, and this has resulted more or less unfavorably upon the import-trade. Thus when the Cunard steamers were temporarily withdrawn from Boston, in 1868, the reason announced was that they could not obtain return cargoes to Liverpool. Other causes, however, have operated in the past to the injury of the export-trade of Boston; besides, the mere difference, as some of us have contended, might long ago have been overcome, in good degree, by the saving in cost of handling and transshipping, which a proper development of the facilities of the port would secure.

During the last few years the principal railroad lines have been extended to tide-water, a suitable elevator has been built at East Boston by the Boston and Albany Railroad Company, and this company has met the enterprise of the Cunard line in the proper spirit, and has co-operated with it in its efforts to build up the export-trade to Liverpool. A large and steady increase in this trade may from this time forward be looked for.

Question 14. To what extent is grain purchased at Boston by steamer lines for the purpose of completing cargoes to Europe?

Answer. Three or four years ago to a very considerable extent, when it was necessary to give a new impulse to the export-trade to Liverpool; latterly, not all.

Question 15. Please to state whether, in the opinion of some of your leading merchants, fluctuation of rates on trunk-railroads out of Boston are or are not greater than those on ocean freights generally.

Answer. Ocean rates of freight are subject to almost daily fluctuations, which cannot be said of rates by rail, except under special and peculiar circumstances, and then only for a short time.

Question 16. What is the present cost per bushel for the direct transfer of grain from railroad-cars into sea-going vessels, and what is the average cost of such transfer, provided grain is shipped from cars into warehouses, and from thence into sea-going vessels?

Answer. The elevator charges are 1¼ cents a bushel for passing through, with the privilege of remaining ten days; insurance for a much longer time, and a guarantee of weight. For every additional ten days, or part of ten days, ¼ of a cent a bushel.

Question 26. Have the Boston and Albany Railroad and the roads forming the Central Vermont connection to the West provided elevators from which grain can be shipped directly to ocean steamers?

Answer. The only elevator here at which sea-going steamers can load, is that of the Boston and Albany Railroad, which has a capacity of a million bushels. The Fitchburgh Railroad Company has long been talking about building an elevator, but there is no evidence of any purpose on its part to *do* anything at present. The Lowell Railroad Company has also had it in contemplation to build an elevator, and in other ways to develop its terminal facilities, but has done nothing because it has not been able to carry into effect a consolidation with the various lines between Nashua and Ogdensburgh. The resignation, recently, of the late general manager, Mr. George Stark, is a great calamity to this line. The Board of Trade has for years been urging upon the through-lines from the interior the importance of supplying the facilities referred to above, for their own advantage as well as for the good of the port.

Question 29. In the shipment of goods from the West to Boston, or from Boston to the West, do any of the roads enter into contracts with individuals at rates below

those charged the public generally, and in the opinion of Boston merchants are such discriminations favorable to or prejudicial to the commercial interests of that city?

Answer. There is seldom a time, probably, when large shippers cannot make special rates both from and to the seaboard, but as such variations from the published tariffs are not confined to the Boston business, this city derives no benefit from them which gives it any advantage over other cities on the seaboard.

Question 30. Have the higher ocean rates at Baltimore and New York tended to increase the amount of exports from Boston, or, on the other hand, have the high rates at the latter ports been simply the results of a larger amount of freight offering at those ports and of the better paying cargoes from foreign countries, the latter tending to increase the general business of those ports and thus to increase the demand for shipping?

Answer. Undoubtedly the higher ocean rates at New York and Baltimore result from the larger amount of freight offering at those ports and from the better paying cargoes from foreign countries which are brought to them. The lower rates at Boston are enabling the shippers here to make up for lost time in the past. Some of them, for instance, have a standing offer from some of the steamship companies, of a penny a bushel for grain, under the New York rates for Liverpool, whatever those may be. Perhaps the steamship companies are compensated in part for this deduction by what they save in general expenses at Boston as compared with New York.

One trouble with regard to the exportation of grain from Boston has been and is a want of ample warehouses for the storage of grain. Boston is not a grain market to any considerable extent, at present. If there were large supplies here constantly ready for shipment from which orders could be filled on the moment, ocean rates here would not vary much, if at all, from what they are at competing ports. There will be a change in this regard in Boston, bye and bye.

Question 32. How do the terminal charges for the transportion of grain and other freights at Boston, compare with similar charges at New York, Philadelphia, and Baltimore?

Answer. The terminal charges are believed to be considerably lower in Boston than in New York. I am not informed with regard to Philadelphia. At Baltimore I should suppose that they would be about the same as at Boston, the facilities at the steamship wharves of the Baltimore and Ohio Railroad Company being as good as, but no better than, those of the Boston and Albany Railroad Company at East Boston.

Question 33. Why is it that the Boston and Albany and its western connections refuse to guarantee weights on bills of lading to Boston? In this connection please state the classes of merchandise on which this guarantee is desired at Boston.

Answer. Answering the last part of this inquiry first, guaranteed weights on railroad bills of lading are desired especially on grain. The companies ought to give them, but they tell our merchants that to do so would involve the weighing of the grain at all the points in the West where it is received and that many of these are small places where there are no weighing facilities. The Boston and Albany Railroad Company is unwilling to admit that consignees in New York obtain bills of lading from the West with guaranteed weights, and, as I believe the fact really to be, parties in the trade here are naturally annoyed at this difference in the treatment of the businessmen of the two cities, and think that if the Boston and Albany Railroad Company insisted upon it, they might, through the New York Central Railroad Company, secure the desired arrangement for Boston.

Question 36. How do ocean-steamer rates from Boston to Liverpool compare with the rates from Liverpool to Boston?

Answer. They are regulated by altogether different standards. Just now the earnings of the steamers on the trips from Liverpool to Boston are only about one-third as much as on the trips from Boston to Liverpool. Owing to the present dullness of trade, there is but little freight offering for the United States at Liverpool, and some of the ships are coming over with coal on board sufficient for the return-trip.

Question 42. For every 100 tons shipped from Boston to Europe, about how many tons are received at Boston from Europe?

Answer. Until now the capacity of the steamers has been fully occupied on both the outward and homeward passages. The ships coming this way previously to 1874 brought large numbers of emigrant passengers, and this displaced so much cargo.

Question 44. Inclosed herewith you will find a blank marked "B." It is supposed that you may be able to procure the required data from the freight department of the Boston and Albany Railroad Company.

Answer. Quantity of grain and flour, live stock, animals, and provisions, received at western termini of the Boston and Albany Railroad during the year 1875:

Commodities.	Quantity received.
Flour, barrels	1,794,025
Wheat, bushels	1,048,589
Corn, bushels	10,238,001

	Quantity received.
Rye, bushels	3,871
Oats, bushels	3,928,979
Barley, bushels	51,528
Live animals.	**Number.**
Cattle, cars of	12,550
Sheep, cars of	1,639
Hogs, cars of	5,668
Provisions, pounds	

The above is for the year ended September 30, 1875.

SCHEDULE C.—*Rates of freight by the only regular steamship line (Cunard) which sailed from Boston to Liverpool during* 1875.

[Weekly sailings]

Month.	Grain.	Flour.	Provisions.
	s. d.	*s. d.*	*s. d.*
January	0 8¼	.....	48 0
February	0 8¼	3 2	40 3
March	0 7¼	2 6	31 10
April	0 5¼	.....	27 0
May	0 5	.....	27 0
June	0 6	.....	30 0
July	0 7	2 9	33 0
August	0 7¼	2 9	35 0
September	0 6	2 9	30 6
October	0 6¼	2 8	30 0
November	0 7¼	3 0	36 6
December	0 8¼	3 9	45 0
Average	0 7*	2 11	34 6

*Nearly.

Question 45. What are the terminal charges at Boston connected with the receipt and delivery of grain for export?

Answer. I am informed by the agent of the Cunard Steamship Company, in Boston, that the following are the only terminal charges to the steamer, connected with the receipt and loading of grain at East Boston:

Transportation from the elevator to the steamer	.011
Labor trimming in the hold, about	.001
Total per bushel	.012

There is no wharfage; the elevating expenses are borne by the railroad company in an additional rate on through-shipments, and by shippers on local lots.

Question 46. To what extent are the New England States supplied with grain and flour from the Boston market?

Answer. Almost the whole of the territory of the New England States now receives its grain and flour direct from the West. The localities immediately around Boston are supplied from this market. Large sales of flour and grain are made in Boston for all parts of New England, but the shipment is from the West direct to the various places of consumption, the property not coming here at all. Sales are also made in the West to a considerable extent for New England, independently of Boston altogether. I am told that the actual distribution in New York of flour and grain to New England has almost ceased.

Question 47. What is being done toward securing a direct rail line from Boston by what is known as the Hoosac Tunnel and Lake Ontario route?

Answer. There are one or two projects for straightening and extending the short lines connecting with the Hoosac tunnel at its western extremity, so as to shorten the distance thence to Schenectady. I do not think that anything will be done, for some time to come, toward constructing a new and independent route from the tunnel to Oswego, as was talked about a few years ago, to meet the Lake Ontario shore line. I am told that this line is now controlled by the Delaware, Lackawanna and Western, and the Rome, Watertown and Ogdensburgh Railroad Companies, and therefore it cannot be expected, certainly, to discriminate in any way against New York. The policy of all railroad companies, no matter in what interest projected, must be governed by

the course of trade. I am a firm believer in the laws of trade, and in the fixity of their operations in the long run. I have never expected that any east and west lines of railway beyond the Hudson River would be run for the exclusive or even paramount benefit of Boston. I recognize the position of New York as, in an important sense, the commercial capital of the country. At the same time I believe that there are other cities on the Atlantic coast where a portion of the export and import trade can be done to the advantage of the interior; further, that Boston is one of those cities; and further, that her position and trade entitle her to as low rates to and from the West as New York. If the rates of transportation are thus equalized, the merchants of Boston have no doubt that they can successfully compete with New York for a share of the foreign and internal trade of the continent.

Question 48. About what proportion of the grain exported at Boston is shipped on through bills issued at the West?

Answer. About one-eighth.

Question 49. About what proportion of the total tonnage of exports from Boston is shipped on through bills issued at the West, and what proportion is shipped directly from Boston?

Answer. About one-half on local bills of lading from Boston to Liverpool, and about one-half on through bills of lading issued at points in the West.

APPENDIX No. 7.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF BALTIMORE AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, BY MR. GEORGE U. PORTER, SECRETARY OF THE BALTIMORE BOARD OF TRADE. 1876.

Question 1. It is stated that there is an allowance made of 3 cents per bushel, or per 100 pounds, on grain shipped from the West to Baltimore for export. Please state whether such drawback is made by the railroad company or by the steamship company, and what special advantages the port of Baltimore enjoys in this respect, or generally, with respect to railroad rates, steamer rates, and charges for elevating and warehousing and transferring from car to ship. In replying to this inquiry, please to present a specific statement showing the various terminal charges at Baltimore from the car to the ship on grain which is exported to foreign countries or shipped coastwise to other ports of the United States.

Answer. For the purpose of offering to the trade of Baltimore facilities to compete with neighboring markets, elevator charges were reduced by the Baltimore and Ohio Railroad Company, at the solicitation of the Corn and Flour Exchange.

We give the old and new rates as follows:

	Old rate per bushel.	New rate per bushel.
Delivery to carts or vessels, wharfage on the grain and storage for the first ten days or parts of the same	1¾ cents.	1½ cents.
Same from vessels when received	2 cents.	1½ cents.
Each succeeding ten days or parts of the same	½ cent.	⅜ cent.
Delivery in bags, including sewing or tying, with specific weight in each bag, an additional charge of	1 cent.	1 cent.
Delivery in bags, including sewing or tying, without specific weight in each bag, additional charge of	¾ cent.	⅜ cent.
Screening and blowing	¼ cent.	¼ cent.

The above new or reduced rates went into effect on the 10th of November, 1875, and the same rates are now in force, from which it will be seen that on the western receipts of grain the cost in passing through elevator, and on ship board, with privilege of ten days' storage in elevator, is 1½ cents per bushel.

This reduction caused a revival of the corn shipments from the West to our port.

On the 8th of December, 1875, at the further solicitation of the Corn and Flour Exchange of our city, the Baltimore and Ohio Railroad Company, granted a drawback on western grain received over their line and shipped foreign through their elevators of 3 cents per 100 pounds, and simultaneously the Northern Central Road issued similar orders.

The action on the part of our Corn and Flour Exchange to obtain this rebate was to enable Baltimore to compete with Philadelphia and Boston, but more particularly the former, where a similar rebate had been allowed for a long time before, and under its advantages the trade of Baltimore was seriously retarded.

This drawback is paid by the railroad companies.

On and after the 1st of April, 1876, the rebate will be reduced to 1½ cents per 100 pounds, in consideration of a similar reduction to take effect both at Philadelphia and Boston.

The advantages of Baltimore for the export of grain is to be mainly attributed to the unsurpassed terminal facilities possessed by her port, through the enterprise of the railway lines, and also from the high character of her inspection system, which is almost a guarantee to foreign receivers of getting what they order. Cargoes of grain shipped from Baltimore, as a general rule, prove more satisfactory than shipments from New York.

Question 2. For every one hundred full cargoes shipped from Baltimore to ports in Europe, about how many full cargoes are received at Baltimore from Europe?

Answer. Not over twenty full or partially filled cargoes from Europe are received for every one hundred clearing hence with full cargoes. Vessels frequently clear for the "United States" from ports in Europe, seeking business; touching off some port and trying the freight-market. In this way a large number of engagements are made to load at our port. In some instances charters are made by cable, and for several

consecutive voyages, but in most cases based on ballast-rates out; and, in fact, the extremely low rates of freight which have prevailed on the other side of the Atlantic, being but ballast-rates, owners of vessels have to rely on the return cargoes from our country solely for remuneration.

Question 3. Please to describe the nature of the combination existing between the Baltimore and Ohio Railroad and any steamer-line or lines to foreign countries from Baltimore, indicating to what extent and in what manner the Baltimore and Ohio Railroad owns, controls, or influences the business of such lines.

Answer. The Baltimore and Ohio Railroad Company have a moneyed interest only in one of the lines running in connection with their road, viz, the North German Lloyd line to Bremen. My own recollection of the original arrangement is that the Baltimore and Ohio Company's interest amounted to $700,000, they being joint owners with the Lloyd in the first two steamers; subsequently two other steamers were constructed and added to the line; but as the steamers were profitable, the railroad company was not required to share in their cost. Pier-accommodations are extended free of cost to the several lines of steamers running in connection with the Baltimore and Ohio Railroad Company. Coal for steam purposes is furnished to the several lines at first cost to the railroad, and these two privileges give a great advantage to steamers at our port, compared with those ports where high rents are paid for piers, and $1.75 to $2 per ton more for coal.

Question 4. Has the Baltimore and Ohio Railroad made any through rates from the West to other Atlantic sea-ports than Baltimore, or from such other Atlantic sea-ports to the West, which discriminate against Baltimore, and, if such discriminations have been made, is the opinion entertained by the merchants of Baltimore that they are the result of causes beyond the control of the Baltimore and Ohio Railroad, or simply as the result of some line of policy adopted by the Baltimore and Ohio Railroad for its own benefit, regardless of the commercial interest of Baltimore?

Answer. The Baltimore and Ohio Railroad does not make any rates to other Atlantic sea-ports than Baltimore. Those rates are made by the trunk-lines controlling the roads centering at those ports. The Baltimore and Ohio carry freight for these ports, and are compelled either to take their prorate or proportion of such rates, or not carry any of the freight. The Baltimore and Ohio make the Baltimore rate a percentage proportion of such rates, based upon actual distances; unless, owing to the fight between the trunk-lines, before referred to, the rates were reduced to a non-paying figure; then the Baltimore and Ohio declined to reduce rates to Baltimore.

Question 5. For every one hundred loaded cars received from the West at Baltimore, about how many loaded cars are shipped to the West from Baltimore? By the West is meant all points beyond the termini of the Baltimore and Ohio Road on the Ohio River.

Answer. It is impossible to say. When freight from the West is very plentiful, freight to the West is generally very scarce; and in the spring and fall, when shipments to the West are most active, there is a paucity of freight moving from the West, owing to freight being held for the opening of navigation in the spring, and to the harvest operations and necessary work in which the farmers are engaged in the fall, providing for winter. The general average throughout the year would be about three to one.

Question 6. Does not the Baltimore and Ohio Railroad so shape its policy as to favor the upbuilding of the commerce of Baltimore, and is not this the generally-understood policy of the road?

Answer. The Baltimore and Ohio Railroad is regarded by our citizens generally as a home institution, from the fact of the large interest which the city has in it, and aside from a few croakers, whose interests may not be served by it, there can be no doubt about the policy of the company being directed for the promotion of the upbuilding of the commerce of Baltimore.

Question 7. Please to mention the names of steamer-lines, and the number of steamers in each line, engaged in commerce between Baltimore and Philadelphia, Baltimore and New York, and Baltimore and Boston.

Answer. The steamer-lines running from Baltimore to northern ports are as follows:

Baltimore and Philadelphia Steamboat Company, Ericsson Line, via canal, has five steamers.

New York and Baltimore Transportation Line, (inland via canals,) nine steamers.

Boston and Providence, via Norfolk, (Merchants' and Miners' Transportation Company,) has seven steamers.

Question 8. Referring especially to the Boston line, for every one hundred tons of freight transported north, about how many tons are carried south?

Answer. A rough estimate made by the agent of the Boston and Baltimore line of steamers is, for every five hundred tons of freight carried north, not more than two hundred tons are received here in return by their line.

Question 9. Please to state, as accurately as possible, from the freight charges of the

coastwise steamer lines which prevailed during the year 1875, how the average rates per ton from Baltimore to Boston compared with the average charges per ton of such lines from Boston to Baltimore.

Answer. The rates from Baltimore to Boston are higher, as a general thing, owing to the greater amount of freight offering in that direction than from Boston to Baltimore. The rates are regulated entirely by the supply and demand for freight room, either way, and vary almost as frequently as the trips of the line, making it very difficult to reach any exact conclusion as to proportions.

Question 10. To what extent has the Baltimore and Ohio Railroad been able to secure freights from Philadelphia, from New York, and from Boston by means of coastwise steamer lines during the year 1875?

Answer. Shipments by steam from Philadelphia, New York, and Boston are very limited, excepting to points on the line, to the Baltimore and Ohio Road, owing to the preference which merchants generally have for all-rail routes.

Question 11. Does the Baltimore and Ohio Railroad enter into contracts with individuals for the transportation of commodities at special rates, such rates being lower than the published rates of the company, or those which are usually charged to their shippers generally? Please to state a few facts as to such discriminations which have come to your notice. In the opinion of the merchants of Baltimore, are such discriminations in favor of individuals detrimental to the growth of the commerce of Baltimore, and do they conceive such special advantages to individuals to be against public policy, touching the interest of commerce?

Answer. They do at times, though less frequently, merchants inform me, than by other trunk lines, and whenever it has been done, is not especially to accommodate particular individuals, as like privileges are open to any applying at such periods, and this impartial feature results in an earlier correction of the cause for making special contracts. As an instance, when the railroad company has a large excess of cars at any particular point, with no adequate business offering for their employment at stated rates of freight, the foreign orders for grain being at the time slack, a large offer for cars, at a special rate, would be entertained as preferable to keeping their stock and employés idle. This is known to all large receivers here, but no jealous feelings appear to be entertained by them, because no favoritism to individuals is recognized. Much necessarily depends upon the intelligence and enterprise of the merchants, who, at such dull periods, are willing to make the venture. Instances of this character, however, are infrequent with the Baltimore and Ohio Company.

Question 12. To what extent has the Baltimore and Ohio Railroad during the past year, or does it now, engage in transporting freights from Philadelphia, New York, and Boston by means of coastwise steamer lines, and how have the rates thus made from other Atlantic seaports, via Baltimore to the West, compared with the direct all-rail rates from such other Atlantic seaports mentioned to western points?

Answer. The Baltimore and Ohio Road only made use of water communication between Baltimore, Philadelphia, and New York during the war with the Pennsylvania Road, at which time freight was carried almost for nothing. Freight between Boston and Baltimore is taken by the Baltimore and Ohio Road at current Boston rates, as established by the roads centering in Boston.

Question 13. Is the rebate of 3 cents per 100 pounds on grain intended for export at Baltimore made for the purpose of enabling American grain to compete with foreign grain in British ports, or is it simply the result of a contest between rival trunk railroads or rival steamship lines for the purpose of securing business?

Answer. The rebate of 3 cents per 100 pounds (or one and one-half cents since 1st April) was necessary to place Baltimore on an equality with Philadelphia and Boston. A similar rebate had been existing at Philadelphia for a number of years; also, in the opinion of merchants, to enable American grain to compete in European markets by reducing the cost of product brought from the West.

Question 14. Is the weight or volume of freight which can be transported from Boston west via coastwise steamer lines limited by the available freight-space in such steamers, which would not be occupied unless such freights could be secured, and for this cause is the competition for the transport of freights to the West limited in amount?

Answer. No. The steamers from Boston to Baltimore have, as a general rule, plenty of unoccupied room, and it is from this abundance of available space that freight-rates to Baltimore are lower than from Baltimore to Boston.

The absence of more western-bound traffic via steamers from Boston arises more properly from the preference which merchants have for all-rail routes.

Question 15. Please to state in tabular form the prevailing ocean rates from Boston, New York, Philadelphia, and Baltimore to Liverpool during the year 1875, in connection with the average freight-rates from Liverpool to those ports during the same period.

Answer. In reply we refer to the several annexed reports from the respective ports of Boston, New York, Philadelphia, and Baltimore. I regret, however, that so little information could be obtained of freight-rates from Liverpool to ports on the Atlantic.

I would add that early in June, 1875, the English steamship companies at a conference held in London entered into an agreement as to rates between Liverpool and New York. All the companies were ranged under two classes, "fast" and "slow," the latter including but two lines, National and Williams and Guion.

The rates agreed upon were, for fine goods, 40 shillings per ton; rough goods, 20 shillings; weight-goods, 12*s.* 6*d.*; and crates, 7*s.* 6*d.*, with 10 per cent. primage added to the fast lines and 5 per cent. to the slow.

These rates doubtless formed the basis for steamers destined to other Atlantic ports when freight offered.

Ocean freight-rates from Boston to Liverpool, current about the 15th of each month, for the year 1875.

Month.	Steamer.		Sail.	
	Cotton per pound.	Grain per bushel.	Cotton per pound.	Grain per bushel.
January	11/32d.	9d.	.....	7½d.
February	9/32d.	9d.	.....	None.
March	¼d.	6d.	.....	None.
April	¼d.	5d.	.....	4d.
May	¼d.	4½d.	.....	None.
June	5/16d.	5½d.	.....	6½d. last of month.
July	3/16d.	7d.	.....	None.
August	.....	7½d.	.....	None.
September	9/32d.	5½d.	.....	None.
October	5/16d.	6½d.	.....	None.
November	11/32d.	7d.	.....	None.
December	13/32d.	9d.	.....	None.
		7.5		

Correct distance from Boston to Liverpool, 2,936 miles.

Ocean freight-rates from New York to Liverpool, current about the 15th of each month, for the year 1875.

Month.	Steamer.		Sail.	
	Cotton per pound.	Grain per bushel.	Cotton per pound.	Grain per bushel.
January	9/32d.	10½d. to 10¾d.	¼d.	9½d. to 10d.
February	9/32d.	7/8d. to 8d.	9/32d.	.....
March	5/16d.	6½d. to 7d.	¼d.	March 10th, wheat in bags, 7d.
April	¼d.	6d.	7/32d.	5½d.
May	¼d.	5½d. to 6d.	9/32d.	5½d.
June	9/32d. to 5/16d.	6¾d. to 7¼d.	9/32d.	7½d.
July	¼d.	7⅛d. to 8d.	¼d.	7¾d. to 8¼d.
August	¼d.	8¼d. to 9d.	¼d.	9d.
September	¼d.	6½d. to 7d.	5/16d.	6½d. to 6¾d.
October	7/16d. to ½d.	9¼d.	5/16d. to ⅜d.	8½d.
November	7/16d.	8¼d. to 9d.	5/16d.	8d.
December	⅜d.	10¼d. to 10½d.	11/32d.	9d.
			9/32d.	

Correct distance from Sandy Hook, N. Y., to Liverpool, 3,013 miles.

Ocean freight-rates from Philadelphia to Liverpool, current about the 15th of each month, for the year 1875.

Month.	Steamer.		Sail.	
	Cotton.	Grain.	Cotton.	Grain.
January	$\frac{3}{32}$*d.* and 5 per cent.	11 *d.* and 5 per cent.	No sailing-ships from Philadelphia to Liverpool during the year 1875.	No sailing-ships from Philadelphia to Liverpool during the year 1875.
February	$\frac{3}{32}$*d.* and 5 per cent.	11$\frac{1}{4}$*d.* and 5 per cent.		
March	$\frac{3}{32}$*d.* and 5 per cent.	11$\frac{1}{4}$*d.* and 5 per cent.		
April	$\frac{1}{32}$*d.* and 5 per cent.	10 *d.* and 5 per cent.		
May	$\frac{1}{32}$*d.* and 5 per cent.	6$\frac{1}{4}$*d.* and 5 per cent.		
June	$\frac{3}{32}$*d.* and 5 per cent.	8 *d.* and 5 per cent.		
July	.....	6$\frac{1}{4}$*d.* and 5 per cent.		
August	.....	9$\frac{1}{4}$*d.* and 5 per cent.		
September	.....	9 *d.* and 5 per cent.		
October	$\frac{5}{16}$*d.* and 5 per cent.	9$\frac{3}{4}$*d.* and 5 per cent.		
November	$\frac{3}{32}$*d.* and 5 per cent.	9$\frac{1}{4}$*d.* and 5 per cent.		
December	$\frac{3}{32}$*d.* and 5 per cent.	11 *d.* and 5 per cent.		
		9.9		

Correct distance from Philadelphia to Liverpool:

	Miles.
Distance Philadelphia to Cape Henlopen	102
Distance Cape Henlopen to Cape Clear	2,808
Distance Cape Clear to Queenstown	54
Distance Queenstown to Liverpool	236
Total	3,200

Ocean freight-rates from Baltimore to Liverpool, current about the 15th of each month, for the year 1875.

Month.	Steamer.		Sail.	
	Cotton.	Grain.	Cotton.	Grain.
January	$\frac{7}{16}$*d.*	12$\frac{1}{2}$ to 13*d.*	Nothing of moment by sail.	Very few charters of grain to Liverpool by sail.
February	$\frac{3}{8}$*d.*	12$\frac{1}{2}$*d.*		
March	$\frac{3}{8}$*d.*	8$\frac{1}{2}$*d.*		
April	Nominal	Nominal		
May	$\frac{5}{16}$*d.*	8*d.*		
June	$\frac{5}{16}$*d.*	8$\frac{1}{2}$*d.*		
July	$\frac{5}{16}$*d.*	8*d.*		
August	$\frac{5}{16}$*d.*	8$\frac{1}{2}$ to 9*d.*		
September	$\frac{5}{16}$*d.*	8*d.*		
October	$\frac{7}{16}$ to $\frac{1}{2}$*d.*	9$\frac{1}{2}$*d.*		
November	$\frac{1}{2}$*d.*	10$\frac{1}{2}$ to 11*d.*		
December	$\frac{1}{2}$*d.*	13$\frac{1}{2}$*d.*		
		8.8		

With 5 per cent. primage added.

	Miles.
Distance Baltimore to Cape Henry	160
Distance Cape Henry to Cape Clear	2,888
Distance Cape Clear to Queenstown	54
Distance Queenstown to Liverpool	236
Total distance Baltimore to Liverpool	3,338

Question 16. To what extent is grain purchased by the Baltimore and Ohio line, or by any steamer line or lines connected with that road for the purpose of completing cargoes to Europe?

Answer. None whatever by the Baltimore and Ohio Road, nor by the steamer-lines connected with it. As a general thing the freight-room for these steamers is engaged in advance of their arrival.

This is more especially the case with steamers running in connection with that road.

Question 17. Do the steamer-lines from Baltimore to Europe receive their grain-freights at the same wharf at which they receive other merchandise? If not, is the grain brought from the elevator to the ships, or are the ships taken to the elevator for the purpose of receiving such freights?

Answer. All the regular steamers, such as the Allen Line, Beaver Line, and Hamburg German Lloyd Line, receive the grain portion of their cargoes from lighters alongside, the grain being bagged at the elevators. These steamers carry general cargo, and only grain in bags. All transient steamers and sailing-vessels loading grain receive their cargoes direct from the elevators.

Question 18. Please to mention the various competing lines for the transportation of merchandise from Baltimore to principal points in the South Atlantic and Gulf States.

Answer. (1) Baltimore and Southern Steam Transportation Company to Wilmington, N. C., and Charleston, has five steamers.

(2) Merchants' Steamship Company to Charleston, one steamer at present.

(3) Baltimore and New Berne line has three steamers.

(4) Merchants and Miners' Company from Baltimore to Savannah, two steamers.

(5) The Bay line of steamers to Norfolk daily, connecting with the Seaboard and Roanoke Railroad at Portsmouth, Va.

Question 19. So far as you may be able, please to state the terms of the agreement under which the various lines just mentioned compete, and also any facts in relation to contests which have been waged between such competing lines during the last year.

Answer. The terms of agreement cannot be stated. As to facts in relation to contests, can only give the points for which competiton is made, and by which lines, and effects of such competition.

The Baltimore Steam-Packet Company, being under the same control as Richmond, Fredericksburgh and Potomac Railroad, is enabled to bring cotton from North Carolina, points below Weldon, without rail competition; but at Richmond they meet a competitor in the Richmond and York River line of steamers, and at Petersburgh with Powhatan line.

Just now, Clyde has a line of steamers running from New Berne, N. C., in connection with railroads into the central part of North Carolina, and are bringing cotton from Raleigh, Goldsborough, &c., at nominally same rates as Baltimore Steam-Packet Company, but allowing rebate to shipper over Baltimore Steam-Packet Company and rail-routes into South Carolina and Georgia. There is competition with the steamers running to Wilmington and to Charleston and Savannah.

This competition ran high last summer, when large quantities of bacon were being sent to South Carolina and Georgia. I think freight on bacon ran as low as 30 cents per 100 pounds to Columbus and Augusta.

Baltimore needs a through freight rail-route to South Carolina and Georgia, which she is denied by Steam-Packet Company controlling Richmond, Fredericksburgh and Potomac Railroad. On this account, freight from Weldon on cotton amounts to $2.25 per bale, when by rail it could be made to pay well at $1.50 per bale.

The city of Richmond and the stockholders of the Richmond and Danville Railroad are petitioning the Virginia legislature to charter another road to Washington from Richmond.

Question 20. Are the elevators at which sea-going vessels load owned by the Baltimore and Ohio Railroad Company, or by other companies or individuals, and what is being done toward the extension of such facilities of trade at Baltimore?

Answer. The Baltimore and Ohio Railroad Company runs two elevators (A and B) at Locust Point, with capacity for storing one and a half to two millions of bushels.

The Canton Company has one for the use of the Northern Central and Union Railway Companies, capacity for storing 100,000 bushels only; but with facilities of transferring from cars to vessels about 45,000 bushels per day.

The Northern Central Railroad Company is now constructing one with capacity of 500,000 bushels, located on deep water at Canton; this latter will be finished, we learn, for the next crop season.

Question 21. How do ocean-steamer rates from Baltimore to Liverpool compare with rates from Liverpool to Baltimore?

Answer. Rates from Liverpool to Baltimore pay but a small portion of the expenses of the trip on account of the competition for the limited amount of goods imported; owners chiefly rely on freights outward from Baltimore for their remuneration.

Question 22. Does the Pennsylvania Railroad transport grain and other western products to Baltimore for export to Europe or other foreign ports, and to what extent?

Answer. Yes; quite largely, particularly of grain; and is making extensive arrangements through the Northern Central Railway Company for terminal facilities, which will enable her to compete for a still larger share of the grain-trade.

Question 23. By means of what rail or water combinations does the Baltimore and Ohio Railroad now transport freights from the West to Philadelphia, New York, and Boston?

Answer. In 1875, during the railroad war, for a portion of the time, the Baltimore and Ohio Road had an ocean steam-line from New York, but since that war closed freight to and from Philadelphia and New York is carried by the canal-lines mentioned in No. B.

Freight to and from Boston, passing over the Baltimore and Ohio Railroad, is carried by the Merchants and Miners' Transportation line.

APPENDIX No. 8.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF CINCINNATI, THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, AND THE VARIOUS TRANSPORTATION LINES CONNECTING CINCINNATI WITH SOUTHERN AND EASTERN MARKETS, BY MR. SYDNEY D. MAXWELL, SECRETARY OF THE CINCINNATI CHAMBER OF COMMERCE. 1876.

Question. 1. For every one hundred loaded cars from Cincinnati to points east of Buffalo and east of the Alleghany Mountains, about how many loaded cars are there received at Cincinnati from the section just referred to?

Answer. To this the Atlantic and Great Western Railway and the Cleveland, Columbus, Cincinnati and Indianapolis reply about the same number. The representative of the Union and National line, passing over the Pittsburgh, Cincinnati and Saint Louis Railway, reports about seventy-five cars, while the Marietta and Cincinnati says for every one hundred loaded cars east they receive about fifty loaded cars west, estimating car-loads in both directions at 20,000 pounds.

From these statements, in the absence of more definite figures, it appears that the number for the four trunk-roads named cannot vary much from seventy-five loaded cars, the number being more likely to be above these figures than below them.

Question 2. For every one hundred cars (loaded) from Cincinnati over the roads running to Lake Erie, about how many loaded cars are received over such roads at Cincinnati?

Answer. About ninety-five loaded cars forwarded from Cincinnati to one hundred loaded cars received at Cincinnati over the Cincinnati, Hamilton and Dayton Railroad, and about an equal number over the Cleveland, Columbus, Cincinnati and Indianapolis Railroad.

Question 3. Is it proper to assume that your statistics of tonnage of vessels built and of steamboats running between Cincinnati and other ports indicates the progress of the commerce of Cincinnati on the Ohio River?

Answer. No, sir. There are causes which have been operating to reduce the number of vessels built at Cincinnati which have no immediate connection with the commerce of this city on the Ohio River. Neither will it do to measure the progress of the commerce by the tonnage of vessels plying between Cincinnati and other ports. To do so would be to assume that the nature of the business, stage of water, &c., were each year the same, whereas the incidents from year to year are quite unlike. It makes no difference how frequently a vessel may arrive and depart, or whether she has full cargoes of Cincinnati freight or not, she is counted once, and only once, in tonnage during the year. Again, the means used by those engaged in the shipping interest have very materially changed and are changing. There has been for a number of years an increased use of barges. The character of the vessels is changing, this being specially the case since the completion of the Louisville and Portland Canal. The tonnage of vessels is increasing. The smaller class of boats is giving way to boats of greatly increased tonnage, constructed with a view to capacity, and yet run at an expense relatively below any of their predecessors. In this connection I wish to call your attention to the report of Capt. Sam J. Hale, from the committee on river navigation, submitted recently to the Board of Trade of Cincinnati. Captain Hale is conversant with river-navigation, having been long intimately connected with the same. The following is the report:

Report of the Committee on River Navigation.

Hon. WM. T. BISHOP,
President Board of Trade:

Your committee on river navigation would respectfully report, that nothing of particular interest has been brought to its attention during the year now drawing to a close; at the same time it may be of interest to note somewhat of the situation and future prospects of this great auxiliary to the commerce of our city.

We find the same general complaint of hard times in steamboating as in other departments of business; and some steamboatmen go so far as to say that the river is

"played out." This conclusion, however, is not warranted by the facts; it is attributable more to the transition from the *old* to the new state of affairs. Since the enlargement of the Louisville and Portland Canal, our steamboats have undergone a complete change in construction and capacity.

What was known as a large and money-making steamboat in the good old steamboating days, from 1850 to 1865, as applied to Cincinnati craft, would not be able to compete in trade with the steamboat of to-day. Then the carrying capacity of the boats adapted to the old locks was from three hundred to eight hundred tons; now it is from five hundred to two thousand tons. Nor is this difference confined merely to the carrying capacity, but the application and utilizing the steam-power is greatly in favor of the present day. For instance, we find that the engines which propelled the Alice Dean, a boat of six hundred tons capacity, now doing the same service for the Thomas Sherlock, a boat of fifteen hundred tons capacity.

This, of course, cheapens river transportation, and it may and propably does work some hardships to river men, especially to those in responsible positions; for the same set of officers and skilled mechanics can navigate one of the large boats of the present day as easily as they could one of the old-time boats, again saving in expense upon tonnage estimate.

To all this add the more rigid economy now practiced by steamboat captains and owners, and we will at once see that the tendency is toward cheap freights by river, and that steamboats can and will carry passengers and freights at greatly reduced rates from those of former periods.

Formerly, the prevailing rates of freight between Cincinnati and New Orleans, either way, was from 30 to 40 cents per 100 pounds. This was before the war. Now, a steamboat, with a competent load, can make money at 20 to 25 cents per 100 pounds.

The supply of freight can never be less than it is now. As Cincinnati increases in trade, so must the traffic upon the river; and to-day a railroad on each bank of the Ohio River would not be able to carry the freight that floats upon its waters. The flat-boats laden with coal, with iron ore, with hay, and other farm products; the barges and the steamboats aggregate a tonnage capacity sufficient for the transportation of millions of tons of freight per annum.

Especially may we expect a large increase in the transportation by river of one of the southern staple productions, to wit, the sugar-crop of Louisiana, which at the close of the war, in 1865, was 18,000 hogsheads; in 1873, 89,000 hogsheads; in 1874, 117,000 hogsheads; the estimate for 1875 being 150,000 hogsheads of sugar, and 250,000 barrels of molasses.

The planting for 1876 is large, and with a continuation of present favorable prospects, the crop of this year will show a further increase.

That this produce can be carried better and cheaper by river than by rail was demonstrated this season, in the fact that when steamboats put freight to 20 cents per 100 pounds, railroads withdrew their competition.

The increase in the transportation of coal and iron ores during the past few years has been remarkable, and we believe that we are safe in saying that the coal and iron alone now carried upon the Ohio River exceeds in tonnage that of the entire transportation of twenty-five years ago.

Tow-boats built expressly for this trade have not only increased in numbers, but largely in power and capacity.

The Oakland and the Ajax, for example, have taken to New Orleans safely, in a single tow, exceeding twenty thousand tons of coal, and the new boat, Joseph B. Williams, is confidently estimated fully competent for a tow of twenty-six thousand tons. The great value of the coal trade within and of itself, and it being so absolutely indispensable to manufactures of every description, makes its cheap transportation of vital importance. The importance and value of the river as a means of transportation is by no means diminishing, but is steadily increasing, quite as rapidly as any other department of trade or commerce in our section.

By the act of Congress of June 23, 1874, the jurisdiction of the Light-House Board was extended over the western rivers; and within the past two years great benefits and aids have been given to navigation by placing signal-lights at all the difficult channels of the river. Government has also been active in removing obstructions, and the navigation of the river is now much safer than formerly. With the fostering care of the Government so well begun, continued to meet the demands of commerce upon our rivers, they can never have any formidable competitor for the transportation of the products of the fertile valleys lying along their borders, or of the countless manufactures which are daily enriching this great central valley.

In conclusion, there is one subject of vital interest to all persons engaged in river commerce, to which we desire to call the attention of the board of trade, the need of radically improving the Ohio River, so as to secure a minimum depth of six feet of water throughout the year. From information furnished by Colonel Merrill, the engineer in charge, we are satisfied that there is no practical difficulty in improving the Ohio River on the same plan and methods that have been so successful on the Seine

and other French rivers. That the system will be successful does not admit of a doubt, as it has been in use in France since 1860, and is in use now. The system would meet with some opposition from the owners of the large coal tows, as at times it would necessitate the breaking up of a returning fleet of empty barges in passing through the locks, causing delay and expense; but as this particular branch of trade is carried on largely during the high-water season, it would appear to be just and fair that a trial dam should be built by the Government, and the system tested; the benefits to the general commerce of the Ohio River far outweighing the one particular interest.

SAM. J. HALE, *Chairman.*

Question 4. Specify the principal commodities which are now transported chiefly or exclusively on the river both above and below Cincinnati, and in both directions.

Answer. There is nothing now transported exclusively by the river. Even coal, which in the very nature of the case must continue to be largely transported by water, is being brought to the city in increased quantities by rail. There are, however, some commodities that will probably always be largely transported by the river. These are coal, stone, cement, lime, pig and manufactured iron, ores, nails, salt, glass and glassware, hay, corn, flour, whisky, sugar, molasses, rice, provisions, furniture, &c.

Question 5. Please state briefly the facts in regard to the time when the transportation of express goods and of the lighter and more valuable freights bound to points at the South and West were transferred entirely from the rivers to the railroads.

Answer. The change closely followed the completion of the respective roads leading to and from the city.

Question 6. In your opinion what classes of freights must always be moved exclusively by river, and with respect to what classes of goods will the rivers always afford the advantage of regulating rail-rates through competition?

Answer. There is no class of freights that must be moved exclusively by river, and yet there are articles that will be largely transported by river. As to classes of goods in which rail-rates are to be always regulated by the river, there are questions involved which are difficult to solve. It is impossible to foresee the remote condition of railroad freighting in this country. The railroad system is by no means completed, particularly through territory tributary to the commerce of the Ohio and Mississippi Rivers. The regulation of rates by the General Government, the building of roads which shall be open to all shippers who may desire to place cars thereon, and other problems, are involved in the survey of the future transportation field of the country.

It may, however, be said safely, that in all the great commodities that are to be moved between the South and the North, in the country adjacent to the great rivers, water navigation must always be a wholesome check on the railroads. With the competition which the Ohio and Mississippi Rivers must always secure, it will not be possible for railroads, except it may be for limited periods, to be independent of river-rates in the heavy products of this country which may be able to reach the river under circumstances at all favorable.

Question 7. Please to give one or two examples of prorating arrangements between rail and water transportation, showing how many miles of river are taken as the equivalent of one mile of rail.

Answer. The basis of prorating arrangements is not found alone in comparative distances. Thus between Cincinnati and Huntington, where there is no rail competition, in the adjustment between the vessels and the Chesapeake and Ohio Railroad, the river is taken at its measurement; that is, one mile of river to one mile of road. Between Cincinnati and Louisville the river, the measurement of which is about 133 miles, is taken at 110 and 120 miles, according to circumstances. Between Cincinnati and Memphis, the understanding is that the adjustment is made on a basis of two miles of river to one mile of road.

Question 8. Statistics of the increase of the wealth and population of Cincinnati during the last twenty years.

Answer. I append herewith a table showing the growth in population, value of real and personal property, of imports and exports of merchandise, and of manufactures, during the past twenty-five years. This period has been taken because we have nothing but the Federal census, and the limitation to twenty years, indicated in your interrogatory, would give but two such exhibits. The year 1854–'55 was the first year in which values as to imports and exports of merchandise were calculated, so that preceding years cannot be given. In manufactures, antecedent to 1869, the aggregate value is given at the close of each decade.

In attempting to measure the growth of this city by these figures, there are circumstances which are necessary to be taken into consideration in connection with the exhibit. Though Covington and Newport are in different States and separated from Cincinnati by the Ohio River, they are substantially a part of Cincinnati. A large number of the citizens of those cities are engaged in business on the Ohio side, and much of the manufacturing done there is either conducted by Cincinnati enterprise and wealth, or owes its importance to its proximity to this city. While the ratio of

increase will not be seriously affected by considering the population of the three cities as one as a mere abstract fact connected with population, it may be of interest, and I accordingly give them, as follows, from the census of the three last decades:

Cities.	1870.	1860.	1850.
Cincinnati	216,239	161,044	115,435
Covington	24,505	16,471	9,408
Newport	15,087	10,046	5,895
Total	255,831	187,561	130,738

An important fact in connection with this subject is the tide of emigration which has set in from the city to the country adjacent. Within a radius of twenty miles, not embraced in the city limits, many new suburban towns and villages have sprung up during the past ten years. Old ones have largely increased in population and wealth. This growth has been almost entirely from the city. The drain made on Cincinnati in this respect is an important one, and though it is not practicable to reach the exact extent of the loss, it has doubtless relatively materially changed the figures as to the population and wealth of the city, as the same is shown by the census and by the figures of the tax duplicate of the city.

Again as to growth, as exhibited by the values of merchandise, which has been received and shipped at Cincinnati, it must be remembered that from the year 1866 to 1876 immense depreciation in values occurred. To measure the aggregate volume by the figures as to aggregate value would be fallacious and unfair to the city. This method would indicate shrinkage in the volume of business, whereas, when the other element which enters into the calculation is considered, a material and important increase would be shown. This same fact must also be kept in view in considering the statistics as to the manufactures of the city. The past ten years, in almost all departments, has been a period of shrinkage in values, the influence of which, on the aggregate figures of production, has been of a marked character.

Table showing the growth in value of real and personal property, imports and exports of merchandise, and of manufactures in the city of Cincinnati from 1850 *to* 1875, *inclusive.*

Years.	Value of real property.	Value of personal property.	Value of imports.	Value of exports.	Value of manufactures.
1850	$34,194,430	$8,668,298	.....	.....	$46,189,279
1851	34,578,450	11,430,364	.....	.....	.....
1852	35,697,540	16,764,570	.....	.....	.....
1853	36,520,040	30,321,148	.....	.....	.....
1854	58,135,436	28,914,269	.....	.....	.....
1855	60,335,932	24,994,948	67,501,341	38,777,394	.....
1856	60,701,267	20,795,203	75,295,901	50,809,146	.....
1857	61,340,971	25,104,120	77,950,146	55,642,172	.....
1858	62,681,602	26,051,151	83,644,747	52,906,506	.....
1859	63,746,316	29,292,788	94,213,247	66,007,707	.....
1860	61,428,917	30,532,458	103,347,216	77,037,188	46,665,992
1861	62,077,837	30,313,411	90,198,136	67,023,126	.....
1862	63,503,296	29,707,861	103,292,893	76,449,862	.....
1863	64,441,532	35,932,561	144,189,213	102,397,171	.....
1864	65,385,774	49,809,574	389,790,537	239,079,825	.....
1865	67,610,611	63,135,382	307,552,397	193,790,311	.....
1866	66,454,662	67,218,101	362,032,766	201,850,055	.....
1867	68,569,040	68,412,285	335,961,233	192,929,317	.....
1868	69,799,604	61,583,925	289,063,948	144,262,133	.....
1869	72,243,844	58,471,666	283,927,903	163,084,358	119,140,089
1870	78,736,482	57,370,754	312,978,665	193,517,690	127,459,021
1871	123,427,883	56,934,444	283,796,219	179,848,427	135,988,365
1872	119,621,886	55,462,080	317,646,608	200,607,040	143,486,675
1873	121,168,178	63,471,360	396,023,054	213,320,768	127,698,858
1874	123,231,790	58,718,284	331,777,055	221,536,852	144,207,371
1875	125,976,835	58,521,730	311,072,639	201,404,023	146,431,354

You will find herewith your blank marked "F," showing imports and exports of flour and grain each commercial year from 1864–'65 to 1874–'75, inclusive. Our year for statistical purposes ends August 31.

F.—*Flour and grain received at and shipped from Cincinnati, 1865 to 1875.*

Years.	Received.		Shipped.	
	Flour.	Grain.	Flour.	Grain.
	Barrels.	*Bushels.*	*Barrels.*	*Bushels.*
1865	671, 570	5, 031, 905	436, 186	3, 176, 631
1866	659, 046	5, 603, 482	514, 450	1, 835, 945
1867	577, 296	5, 625, 294	412, 068	2, 540, 859
1868	522, 297	3, 914, 210	352, 896	1, 240, 229
1869	571, 280	4, 948, 611	367, 083	1, 389, 876
1870	774, 344	5, 719, 279	576, 677	1, 489, 953
1871	705, 579	5, 261, 916	538, 498	1, 395, 046
1872	592, 930	5, 286, 678	410, 501	938, 448
1873	765, 469	7, 032, 051	560, 829	1, 160, 656
1874	774, 916	7, 521, 238	551, 774	1, 867, 405
1875	697, 578	7, 600, 432	473, 460	1, 570, 357

Question 9. Please to describe the routes over which freights are shipped between Montreal and Cincinnati, Boston and Cincinnati, New York and Cincinnati, Philadelphia and Cincinnati, Baltimore and Cincinnati, giving the names of the roads composing such routes, and, in the same connection, the various fast freight-lines operated over each of such routes.

Answer. In replying to this question, that part of the answer pertaining to fast-freight lines should be considered in connection with a description of the routes, inasmuch as the latter represents, mainly, what is generally regarded as the trunk-lines, though some of the roads entering into these lines also make connections with other roads, that either make substantially different lines of transportation or render the creation of such lines a possible thing.

Montreal and Cincinnati: via Grand Trunk Railway and Cincinnati, Hamilton and Dayton Railroad.

Boston and Cincinnati: via Boston and Albany Railroad, New York Central Railroad, Lake Shore and Michigan Southern Railroad, and Cleavland, Columbus, Cincinnati and Indianapolis Railway; also, via Boston and Albany Railroad, New York Central Railroad, Canada Southern Railroad, and Cincinnati, Hamilton and Dayton Railroad; the Erie Railway, Pennsylvania Railroad, Baltimore and Ohio Railroad, and the Chesapeake and Ohio Railroad also connect Cincinnati with Boston, but do so partially by water.

New York and Cincinnati: via New York Central Railroad, Lake Shore and Michigan Southern Railroad, and Cleveland, Columbus, Cincinnati and Indianapolis Railway; also, via Pennsylvania Railroad, and Pittsburgh, Cincinnati and Saint Louis Railway; also, via Erie Railway and Atlantic and Great Western Railroad; the Baltimore and Ohio Railroad has connections with New York over the Philadelphia, Wilmington and Baltimore Railroad, and the New Jersey division of the Pennsylvania Railroad, running cars through from Cincinnati to New York without change, though controlling no road to that city, while the Chesapeake and Ohio Railroad connects by steamship from Richmond to New York.

Philadelphia and Cincinnati: via Pennsylvania Railroad, and Pittsburgh, Cincinnati and Saint Louis Railway. The Baltimore and Ohio Railroad has connections with Philadelphia over the Philadelphia, Wilmington and Baltimore Railroad, running cars through without change from Cincinnati to Philadelphia, though controlling no road from Baltimore to the latter city. The Chesapeake and Ohio Railroad connects by water from Richmond, Va. A line for freights also exists, comprising the Cleveland, Columbus, Cincinnati and Indianapolis Railway, Lake Shore and Michigan Southern Railroad, Erie Railway, Lehigh Valley Railroad, &c., and North Pennsylvania Railroad.

Baltimore and Cincinnati: via Baltimore and Ohio Railroad and Marietta and Cincinnati Railroad; also via Northern Central Railway, Pennsylvania Railroad, and Pittsburgh, Cincinnati and Saint Louis Railway.

The answer to that part of the question pertaining to fast-freight lines will be found embraced in the following list, exhibiting the names of the fast-freight lines running between Cincinnati and other points north, east, and south, with the roads over which they run respectively:

White Line, Merchants' Dispatch, Hoosac Tunnel Line: Boston and Albany, New York Central, Lake Shore and Michigan Southern, and the Cleveland, Columbus, Cincinnati and Indianapolis Railroads.

Grea Western Dispatch, Erie and Pacific Dispatch, South Shore Line: Over Erie Railway and Atlantic and Great Western Railroad as to the first and second above named, and over Erie Railway, Lake Shore and Michigan Southern Railroad, and Cleveland, Columbus, Cincinnati and Indianapolis Railway as to the last-named line.

The South Shore Line also carries freight between Cincinnati and Philadelphia over roads previously mentioned in connection therewith, together with the Lehigh Valley Railroad, &c., and the North Pennsylvania Railroad.

Union and National Line: Over Pennsylvania Railroad, and Pittsburgh, Cincinnati and Saint Louis Railway.

Continental Line: Over Baltimore and Ohio Railroad and Marietta and Cincinnati Railroad.

Diamond Line: Over Erie Railway, Canada Southern Railroad, and Cincinnati, Hamilton and Dayton Railroad.

Canada Southern Line: Over Boston and Albany Railroad, New York Central Railroad, Canada Southern Railroad, and Cincinnati, Hamilton and Dayton Railroad.

National Dispatch Line: Over Cincinnati, Hamilton and Dayton Railroad, Grand Trunk Railway, and Vermont Central Railroad.

Green Line: Over roads generally south of the Ohio River.

Question 10. Which of the trunk-lines to the East from Cincinnati do not allow the use of fast-freight lines?

Answer. Fast-freight lines, as will be seen from the answer to question 7, are operated over all the trunk-lines to the East from Cincinnati. The Chesapeake and Ohio Railroad, running from Huntington, W. Va., to Richmond, Va., has no organized fast-freight line, although the road furnishes facilities for the transmission of fast freight, in connection with steamers from Cincinnati to Huntington and from Richmond to New York and other seaboard cities. All the fast-freight lines to which allusion has been made are co-operative lines, with the exception of the Merchants' Dispatch, which is a commission line and carries only west-bound freights.

Question 11. Please to state the relative importance of Cincinnati, in comparison with other cities, as to some of the principal commodities of her commerce.

Answer. The receipts and shipments of merchandise which unequivocally belong to the commerce of a place, in contradistinction to those which by the accident of transportation represent commodities merely passing through the point, is, with the present system of statistics in most of the cities, difficult to procure. There might be a great disproportion between the real business of a commercial point and what seemed to be the business as shown by figures representing the movement of produce at that place. The figures as to Cincinnati commerce, with the exception of a very few articles, probably more nearly show the actual business of the city than those generally of other large points. Without having more data than I now possess, it would be useless to undertake the answer you seek.

Question 12. Please to state, approximately at least, the value of imports and exports by river and by rail during the years 1855, 1865, and 1875.

Answer. The purpose of our statistics as to values, both in imports and exports, is to furnish information as to the aggregates of the various articles of our commerce without regard to the methods of transportation, so that a part of the matter sought in your interrogatory would require an amount of labor which we cannot perform. This is especially the case in imports. In the exports our books are so kept that it is less difficult to arrive at the facts, and I have had prepared from original sources the values of the aggregate shipments for the three periods named, though, for reasons hereafter assigned, the business of the canal and railroads is united. In three instances approximations are used as to the distribution, but in no case as to total values by all means of transportation. In all other instances the figures have been reached through careful computation, in which the data have been the actual shipments as reported to the Merchants' Exchange.

The following exhibit shows the aggregate value of merchandise exported from Cincinnati by river and by railroad and canal for the three commercial years of 1854-'55, 1864-'65, and 1874-'75, respectively, each year closing August 31:

1854-'55.	River	$20,733,234
	Railroad and canal	18,044,160
	Total	38,777,394
1864-'65.	River	77,498,017
	Railroad and canal	116,292,294
	Total	193,790,311
1874-'75.	River	43,832,099
	Railroad and canal	157,571,924
	Total	201,404,023

It will be observed that the shipments by railroad and canal are given conjointly. This is in accordance with the manner in which the two are coupled on our books.

By reference to the detailed table furnished elsewhere in this communication it will be seen that the exports now by canal are so comparatively small that for the year 1874–'75, at least, the aggregate is not materially swelled by this conjunction.

There are a number of matters to be considered in connection with the foregoing figures in order to render them available as a measure of the relation which the river and railroad commerce sustain to each other. Indeed, it may be questioned whether the aggregate value of the commodities is so good an index of relative business as the aggregate quantities, which represent business in a way that fluctuating values cannot. The year 1864–'65 embraced the larger part of the closing year of the war, with its greatly disturbed values. The immense depreciation in prices which has occurred since that period would place the year 1874–'75 at a disadvantage in the comparison. Again, in that year, as in the preceding years of the war, the business relations of Cincinnati were unlike the periods both before and after the rebellion. This was pre-eminently a border city. Our commercial relations with the South had been broken up; things were in an abnormal condition. Our commerce with the South was mainly by the river, and even this was in such a state that the figures represent the unnatural condition which war imposes upon commerce, rather than the relation which a healthful business sustains to another period similarly free from the operation of extraordinary causes.

Question 13. Please to state separately the amount of shipments of each commodity by rail and canal for the year ended August 31, 1875.

Answer. You will find a table immediately following showing the shipments of each article of merchandise, reported by the chamber of commerce, by river, railroad, and canal, together with the grand total in each case, for the year indicated. This table has been prepared from the original sources of the chamber, and the grand aggregates are the same which appear in the table on pages 189 and 190 of the annual report of the chamber for 1874–'75. The complete distribution into the various methods of transportation we have not previously attempted. In this table approximations have been necessary in but three instances, and these cannot vary much from the real quantities.

Table showing the aggregate exports of merchandise from Cincinnati, by river, railroads, and canal, for the commercial year ending August 31, 1875.

Articles.	River.	Railroads.	Canal.	Total quantity.
Alcohol ..... barrels..	613	558	.....	1,171
Ale, beer, &c ..... do....	25,629	82,929	614	109,172
Apples, green ..... do....	19,742	27,549	752	48,043
Bagging ..... pieces..	25,715	29,800	.....	55,515
Barley ..... bushels..	7,553	74,032	1,148	82,733
Beans ..... do...	4,533	32,413	.....	36,946
Beef ..... { In barrels ..... pounds..	287,006	1,764,440	.....	2,051,446
{ In tierces ..... do....	357,060	4,760,490	.....	5,117,550
Boots and shoes ..... cases..	12,670	44,878	.....	57,548
Bran, shipstuff, &c ..... tons..	504	2,743	79	3,326
Brooms ..... dozen..	14,499	5,580	.....	20,079
Butter ... { ..... barrels..	480	418	.....	898
{ ..... firkins and kegs..	16,397	9,311	.....	25,708
Candles ..... boxes..	54,254	228,436	.....	282,690
Castings. { ..... pieces..	27,815	4,510	.....	32,325
{ ..... tons..	990	7,630	15	8,635
Cattle ..... head..	1,249	102,189	.....	103,438
Cement ..... barrels..	6,466	13,684	482	20,632
Chairs ..... dozen..	13,358	263	.....	13,621
Cheese ..... boxes..	39,015	79,272	.....	118,287
Coal ..... bushels..	.....	4,566,950	435,550	5,002,500
Coffee ..... bags..	26,989	99,202	51	126,242
Cooperage ..... pieces..	64,753	66,980	24,124	155,857
Corn ..... bushels..	82,719	501,494	11,302	595,515
Corn meal ..... barrels..	1,491	635	150	2,276
Cotton ..... bales..	4,697	145,834	19	150,550
Crockery-ware ..... packages..	*4,820	*1,263	.....	6,083
Eggs ..... boxes and barrels..	77	10,076	.....	10,153
Feathers ..... bags..	361	8,291	.....	8,652
Fish ..... { ..... barrels..	4,896	5,081	40	10,017
{ ..... kegs and kits..	15,659	35,382	.....	51,041
Flour ..... barrels..	118,786	353,983	691	473,460
Fruit, dried ..... bushels..	13,590	69,560	39	83,189
Furniture ..... packages..	69,792	15,446	.....	85,238
Glass ..... boxes..	21,018	14,861	.....	35,879
Glassware ..... packages..	38,627	39,593	.....	78,220
Grease ..... tierces..	706	6,404	.....	7,110
Hardware ..... boxes and casks..	19,714	22,532	.....	42,246

* Relative quantities sent by river and railroads, and these cases are approximations.

Table showing the aggregate exports of merchandise from Cincinnati, &c.—Continued.

Articles.	River.	Railroads.	Canal.	Total quantity.
Hay ..... bales..	1, 991	5, 959	192	8, 142
Hemp ..... do ...	825	13, 397	4	14, 226
Hides .... number..	22, 816	106, 145	.....	128, 961
Hides .... pounds..	6, 220	62, 250	34, 250	102, 720
Hogs ..... head..	2, 101	147, 163	.....	149, 264
Hops ..... bales..	328	1, 177	16	1, 521
Horses ..... head..	1, 328	4, 572	.....	5, 900
Iron, pig ..... tons..	*26, 019	*52, 591	.....	78, 610
Iron and steel .. pieces..	69, 635	27, 309	.....	96, 944
Iron and steel .. bundles..	60, 533	111, 794	.....	172, 327
Iron and steel .. tons..	3, 622	20, 996	334	24, 952
Lard ..... In tierces..... pounds..	3, 595, 660	25, 983, 424	.....	29, 579, 084
Lard ..... In kegs..... do....	677, 299	599, 495	.....	1, 276, 794
Lead, white ..... kegs..	32, 018	138, 440	308	170, 766
Leather ..... bundles..	4, 381	30, 561	.....	34, 942
Lime ..... barrels..	9, 101	10, 809	6, 764	26, 674
Malt ..... bushels..	78, 878	181, 243	13, 576	273, 697
Manufactures, sundry ..... packages..	16, 525	8, 060	.....	24, 585
Merchandise, sundry .... do....	190, 500	1, 101, 000	.....	1, 291, 500
Merchandise, sundry .... tons..	1, 455	140	1, 660	3, 255
Molasses ..... barrels..	16, 652	10, 490	70	27, 212
Nails ..... kegs..	134, 432	153, 942	2, 442	290, 816
Naval stores ..... barrels..	1, 794	6, 681	325	8, 800
Oats ..... bushels..	31, 895	159, 982	1, 365	193, 242
Oil ..... barrels..	20, 901	146, 678	904	167, 783
Oil-cake ..... tons..	18	1, 920	.....	1, 938
Onions ..... barrels and sacks..	4, 790	4, 307	30	9. 127
Peanuts ..... bags..	1, 930	39, 425	25	40, 680
Bacon ..... pounds..	15, 392, 625	14, 504, 261	.....	29, 897, 886
Hams ..... do ...	6, 325, 267	17, 081, 2[illegible]9	26, 972	23, 433, 508
Pork ..... barrels..	17, 361	26, 609	.....	43, 970
Pork ..... In boxes ..... pounds..	296, 000	4, 854, 730	.....	5, 150, 730
Bulk meats ..... do....	3, 547, 073	34, 202, 942	.....	37, 750, 015
Potatoes ..... barrels and sacks..	36, 809	79, 810	459	117, 078
Rope, twine, &c ..... packages..	5, 577	16, 915	.....	22, 492
Rye ..... bushels..	15, 800	81, 473	972	98, 245
Salt ..... barrels..	58, 766	127, 053	4, 732	190, 551
Salt ..... sacks..	470	4, 430	175	5, 075
Seed ..... Flax ..... do....	273	7, 107	30	7, 410
Seed ..... Grass and clover ..... do....	13, 776	36, 637	50	50, 465
Sheep ..... head..	1, 429	170, 578	.....	172, 007
Soap ..... boxes..	72, 167	166, 828	317	239, 312
Spices ..... packages..	2, 163	1, 014	.....	3, 177
Starch ..... boxes..	*166, 875	*216, 548	20	383, 443
Stearine ..... tierces..	95	17, 465	.....	17, 560
Sugar .... hogsheads..	2, 609	4, 372	324	7, 305
Sugar .... barrels..	21, 350	78, 180	.....	99, 530
Tallow ..... tierces..	106	3, 698	.....	3, 804
Tobacco .. Leaf ... hogsheads..	3, 028	40, 218	3	43, 249
Tobacco .. Leaf ... boxes and bales..	.....	8, 776	.....	8, 776
Tobacco .. Manufactured ..... packages..	17, 093	200, 299	.....	217, 392
Vinegar ..... barrels..	7, 062	6, 901	578	14, 541
Wheat ..... bushels..	247, 016	342, 349	11, 257	600, 622
Whisky ..... barrels..	77, 239	269, 610	584	347, 433
Wine and liquor ... do....	2, 291	3, 987	.....	6, 278
Wine and liquor ... baskets and boxes..	11, 276	24, 002	.....	35, 278
Wool ..... sacks and bales..	1, 598	12, 631	31	14, 260

* Relative quantities sent by river and railroads, and these cases are approximations.

Question 14. A description of the trunk-railroads connecting Cincinnati with the lakes.

Answer. Accompanying the above are certain inquiries touching the number of miles of road owned, built, operated under lease, &c., but they do not indicate whether the details requested refer to so much of the respective roads as are necessary to connect Cincinnati with the lakes, or are intended to embrace all the road controlled by such trunk-lines without regard to lake connection. Assuming it is the former, the following statement shows the distance only of so much of each trunk-road as may be necessary to connect Cincinnati with the lakes:

CINCINNATI, HAMILTON AND DAYTON RAILROAD.

Cincinnati to Toledo:

Number of miles owned	60
Number of miles operated, in addition, under lease or otherwise	142
Total length of road	202

Number of miles built by the company now operating it 60
Number of miles acquired by purchase, lease, or otherwise 142

CLEVELAND, COLUMBUS, CINCINNATI AND INDIANAPOLIS RAILWAY.

Cincinnati to Cleveland:

Number of miles owned 165
Number of miles operated, in addition, under lease or otherwise 81
Number of miles built by the company now operating it ..... None.

In explanation of the last named, it should be stated that the present company was the result of a consolidation between the Cleveland, Columbus and Cincinnati Railroad and the Bellefontaine Railway Company, the road from Cleveland to Springfield having been partially constructed and the remainder purchased by the Cleveland, Columbus and Cincinnati Railroad prior to such consolidation.

Number of miles acquired by purchase, lease, or otherwise, 246.

INDIANAPOLIS, CINCINNATI AND LAFAYETTE RAILROAD.

Number of miles owned 179
Number of miles operated, in addition, under lease or otherwise ..... None.

Total length of road 179

Number of miles built by the company now operating it 179
Number of miles acquired by purchase, lease, or otherwise ..... None.

The Indianapolis, Cincinnati and Lafayette Railroad extends from Cincinnati to Lafayette, 179 miles. At the latter city it connects with the Cincinnati, Lafayette and Chicago Railroad, running from Lafayette to Kankakee, a distance of 75 miles. At Kankakee it connects with the Illinois Central Railroad, running thence to Chicago, 56 miles; the whole making a line from Cincinnati to Chicago 310 miles in length.

GREEN LINE, CINCINNATI TO CHICAGO.

This consists of a line comprising the Cincinnati, Hamilton and Dayton Railroad from Cincinnati to Richmond, 70 miles, and Pittsburgh, Cincinnati and Saint Louis Railway, Richmond to Chicago, 224 miles; total distance, Cincinnati to Chicago, 294 miles.

CINCINNATI, SANDUSKY AND CLEVELAND RAILROAD.

The Cincinnati, Sandusky and Cleveland Railroad, and the Cleveland, Columbus, Cincinnati and Indianapolis Railway constitute a line from Cincinnati to Sandusky, a distance of 211 miles. The Cincinnati, Sandusky and Cleveland Railroad runs from Dayton to Sandusky, but so much of the road as lies between Dayton and Springfield is leased to the Cleveland, Columbus, Cincinnati and Indianapolis Railway. The whole line consists of the Cleveland, Columbus, Cincinnati and Indianapolis Railway, Cincinnati to Dayton (leased line) 56 miles, and Dayton to Springfield (leased line) 25 miles, and Cincinnati, Sandusky and Cleveland Railroad, Springfield to Sandusky, 130 miles; total distance, Cincinnati to Sandusky, 211 miles.

In addition to these, though not specially, perhaps, within the scope of your interrogatory, the roads connecting Cincinnati with the lake ports of Michigan might properly be enumerated, inasmuch as through freights from Cincinnati to these ports and return pass over them. These are mainly as follows:

Cincinnati to Ludington, on Lake Michigan: Over Cincinnati, Hamilton and Dayton Railroad, Cincinnati to Toledo, 202 miles; Detroit division of the Lake Shore and Michigan Southern Railroad, Toledo to Monroe, 25 miles; Flint and Pere Marquette Railroad, Monroe to Ludington, 253 miles; total distance, 480 miles.

Cincinnati to Bay City, by the above line as far as East Saginaw, thence to Bay City over the Bay City division of the Flint and Pere Marquette Railroad to Bay City; total distance, 357 miles.

Cincinnati to Petoskey, on Little Traverse Bay, Lake Michigan: Over Cincinnati, Hamilton and Dayton Railroad, Cincinnati to Richmond, 70 miles; Cincinnati, Richmond and Fort Wayne Railroad, Richmond to Fort Wayne, 92 miles; Grand Rapids and Indiana Railroad, Fort Wayne to Petoskey, 332 miles; total distance, 494 miles.

Cincinnati to Winona: Over Cincinnati, Hamilton and Dayton Railroad, Cincinnati to Connersville, 66 miles; Fort Wayne, Muncie and Cincinnati Railroad, Connersville to Fort Wayne, 108 miles; Fort Wayne, Jackson and Saginaw Railroad, Fort Wayne to Jackson, 100 miles; Saginaw division of the Michigan Central Railroad, Jackson to

Wenona, 116 miles; total distance, 390 miles. The Mackinaw division of the Michigan Central Railroad is completed northward from Wenona 121 miles in direction of the Straits of Mackinaw.

Cincinnati to Bay City: Over Cincinnati, Hamilton and Dayton Railroad, Cincinnati to Toledo, 202 miles; Lake Shore and Michigan Southern Railroad, Toledo to Detroit, 65 miles; Bay City division Lake Shore and Michigan Southern Railroad, Detroit to Bay City, 110 miles; total distance, 377 miles.

Cincinnati to Grand Haven: Over Cincinnati, Hamilton and Dayton Railroad, Cincinnati to Toledo, 202 miles; Detroit division, Lake Shore and Michigan Southern Railroad, Toledo to Detroit, 65 miles; and Detroit and Milwaukee Railway, Detroit to Grand Haven, 189 miles; total distance, 447 miles.

CINCINNATI SOUTHERN RAILROAD.

Question 15. Please to prepare a statement showing the commercial advantages expected to be realized from the Cincinnati Southern Railroad.

Your attention is called especially to the following points, viz: (*a*) The nature of the ownership of the road, the plan under which it is being constructed, and the manner in which its operations are expected to be controlled in the interest of Cincinnati, referring in this connection to any precedents of successful railway management of this character which may occur to you; (*b*) the connections which it will form between roads entering Cincinnati and roads entering Chattanooga; (*c*) the commodities which will probably compose the bulk of the north-bound and south-bound freights; (*d*) the probable balance of tonnage North and South; (*e*) the anticipated development of business at both ends of the line.

Answer. The Cincinnati Southern Railroad, extending from Cincinnati, Ohio, to Chattanooga, Tenn., a distance of 336 miles, is being constructed by the city of Cincinnati, in its municipal capacity, through a board of five trustees, under the authority and the provisions of an act of the legislature of the State of Ohio, (a copy of which is hereby appended,) and on its completion is to be leased by said board to a person or persons, or a company, who will equip and operate it. Its control in the interests of Cincinnati will be provided for and protected in the lease. No example of a like nature can be given, unless it be the case of the Western and Atlantic Railroad of Georgia, which was wholly built by the State of Georgia. Prior to the war it was operated by the State authorities, and it is stated that its net revenue was sufficient to meet the entire expenses of the State government. It is now leased for a term of years to a company that pays the State $25,000 per month and keeps the road and rolling-stock in complete repair. The company for some time has faithfully complied with the terms of the lease, and has, it is believed, realized for itself a handsome profit. The road runs from Atlanta, Ga., to Chattanooga, Tenn., a distance of 138 miles, and is almost wholly dependent on through-business. Other examples of the operation of roads under leases may be found in cases where companies owning railway-lines have leased the same to other companies to operate, and where the revenue under the leases has been a source of considerable profit both to lessor and lessees. But the Cincinnati Southern Railroad is the only instance where a city has in its corporate capacity wholly constructed a railroad as an improvement essential to the public interests.

The connections of the road.

The road will connect with all the roads concentrating at Cincinnati. The Pittsburgh, Cincinnati and Saint Louis Railroad is the only road that enters Cincinnati in the eastern part of the city, where it connects with the Louisville, Cincinnati and Lexington Railroad. The Cincinnati Southern Railroad crosses the latter about 19 miles south of Cincinnati, and an exchange of business with both roads can be had at this point, if no other means should be devised. The Cincinnati Southern Railroad enters Cincinnati in the western part of the city, where it has convenient connections with all other roads north of the Ohio River that concentrate here.

The gauge of the Cincinnati Southern Railroad is 5 feet, which is the gauge of all roads south of the Ohio River, the Louisville, Cincinnati and Lexington Railroad alone excepted. All the other roads entering Cincinnati are from 4 feet 8½ inches to 4 feet 10 inches, excepting the Atlantic and Great Western, which is 6 feet. At Chattanooga an unbroken connection will be had with all the roads centering there, and as all are of the same gauge, cars may be transported throughout the South without change of any kind.

At Chattanooga the Cincinnati Southern Railroad will connect with the Nashville, Chattanooga and Saint Louis Railroad, and through it with the Memphis and Charleston Railroad, the latter running through Northern Alabama and Mississippi and Southwestern Tennessee; the Alabama and Chattanooga Railroad, passing through Central Alabama and connecting with New Orleans and the Southwest; the Selma, Rome, and Dalton Railroad, through Northwestern Georgia and Central Alabama; the Western

and Atlantic Railroad, from Chattanooga to Atlanta, where it connects with roads that ramify throughout the whole South and Southeast; and the East Tennessee, Virginia and Georgia Railroad, which runs northeastwardly from Chattanooga.

In addition to a direct line to Chattanooga a connection, it is believed, will soon be made from a point on the Cincinnati Southern Railroad south of the boundary line between Kentucky and Tennessee with Knoxville, Tenn., and by roads in progress across the mountains with the Carolinas, thus embracing the entire southeastern seacoast and intervening country. A road is being constructed known as the Cumberland and Ohio Railroad, which will form a direct connection with Nashville, Tenn., by way of Harrodsburgh and Lebanon, Ky. Other lateral roads, in a time not remote, may be reasonably anticipated, each of which in passengers and freight will be a contribution to the trunk lines.

The nature of the bulk of tonnage.

The north-bound tonnage will embrace cotton, rice, sugar, molasses, tobacco, hogs, cattle, fruits, timber, coal, iron ores, pig-metal, copper, lead, zinc, and other mineral products, &c., while liberal importations from South America and the West Indies are among the reasonable probabilities. The south-bound freights will consist principally of the extensive and varied products of Cincinnati industry and the manufactures of the adjacent country, and, in fact, of the entire State, prominent among them being agricultural implements, furniture, provisions, oils, hardware, liquors, railroad supplies, groceries, salt, boots and shoes, grain, flour, and general merchandise.

The probable balance of tonnage.

The balance of tonnage will probably be in favor of south-bound freights. The Louisville and Nashville Railroad, which is situated similarly to the Cincinnati Southern Railroad, carries about seven tons of south-bound freights to four tons of the north-bound, but it is believed that the heavy tonnage of ores and cotton, which is certain to follow the completion of the Cincinnati Southern Railroad, will go far to equalize the tonnage in north and south bound freights.

The commercial advantages to be realized from the road.

That the Cincinnati Southern Railroad will connect two great systems of railroads, the one ramifying throughout all parts of the Gulf and Southeastern as well as Southwestern States, with their varied productions of cotton, rice, sugar, molasses, tobacco, &c., and the other stretching out in all directions to the north, east, and west, with the products of the soil still more varied and yet quite different from the great commodities of the South, would indicate a commercial importance as broad as the commerce of the country. It will bind together two great systems of agriculture which differ widely in their nature, giving them the most favorable opportunity for a mutual interchange of products. It practically will shorten the distance between the Northern and Southern States. It will bring the great interior of the United States into more intimate relations with the Gulf and the Southern Atlantic ports. It will, there is good reason to believe, open up a new route of travel and transportion to the West Indies and the States of South America. It will provide another thoroughfare between the Northeastern and Southwestern States, and will constitute a connecting-link between the North and East and a Southern Pacific Railroad, when the same shall be constructed through the southern part of our territory. It will permanently cheapen freight to and from the South, and will secure the more prompt transmission of articles entering into the interior and foreign commerce of the country. It will open up a region singularly rich in mineral wealth. Along the line of the road and its connections iron and coal and stone abound in close proximity. Nature has been lavish in her gifts in this particular throughout much of the territory penetrated by this road. The influence it will ultimately exert on the iron business of the country, perhaps of the world, is hard to foresee. That the cost of iron-production will here be reduced to the minimum is among the probable results of the building of the road. Discoveries of copper, lead, zinc, and other minerals have been of such a character as to show that they are important interests in connection with this enterprise. Though projected and prosecuted by a single municipality, the project has a natural significance and must have an important bearing on the commerce of the whole country.

The position of Cincinnati will secure her a large share of the benefits to accrue from the completion of this great internal improvement. The geographical position of the city is most favorable to the attainment of great ends through this instrumentality. Until recently, the energies and means of the country were expended in the lines of railroad running with the parallels of latitude. Henceforth, the north and south lines,

in new enterprises, must command the larger attention. Cincinnati, by reason of her position and relations, will be on one of the great lines of travel and transportation between the North and South. She is most favorably situated for the interchange of commodities. She has a system of railroads which converge to her from all sections north of the Ohio River. With her southern road completed, she will also be the point for the substantial convergence of all the railroads of the South with which she makes important connections. Already an important cotton market, she will draw more largely than ever on Tennessee, Mississippi, Alabama, and Georgia for the great staple. The sugars and molasses of Louisiana, which find a liberal market in Cincinnati, will, more than heretofore, seek a point so favorable for their distribution. The rice of the Carolinas, Georgia, and Louisiana will naturally gravitate in the direction of its consumption.

The timber of the South will be drawn upon liberally by the demands of a workshop of steadily-increasing wants. Then Cincinnati has, and will have more largely, what the South wants. Her manufactures are large and varied. Her artisans are inventive and enterprising. Production is cheapened by ample capital and a notable skill. Her provisions, breadstuffs, agricultural implements, furniture, iron and wood manufactures, clothing, boots and shoes, liquors, general merchandise, &c., are wanted throughout the whole South. She is the center of the mineral riches of the interior. She already furnishes the largest assortment of irons of any city of the country, and her pre-eminence in this regard must become more distinguished as the country is developed. She has the sympathy and approbation of the whole southern people, to whom the advantages of this improvement must inure quite as much as to Cincinnati. The people of the South have long been looking to the completion of this work, with the expectation that it would be to them the commencement of a new business era. Neither will the through-business nor the mineral resources of the country adjacent to the road alone benefit Cincinnati. The route through much of Kentucky is located through districts rich in agricultural resources. Lateral roads will follow the completion of the main line in the very nature of the case. A road to Nashville will be among the early sequels to the building of the trunk road. The filling up of the short gap necessary to connect with Knoxville will follow.

The completion of roads now building or projected from North Carolina and South Carolina will open direct routes to Wilmington, Charleston, Port Royal, and Savannah, and a new phase will be put on the whole railroad business of the South.

The anticipated development at both ends of the line.

With reference to the development at either end of the road, it may be remarked there are two classes that will each probably be disappointed, one believing the benefits will come in such a pronounced manner that the results will be well nigh fabulous, and the other, that the benefits will be so remote that no one will be able to trace them to their true cause. Much depends on the people of Cincinnati. Certainly merchants and manufacturers, who have the enterprise and courage to carry through to completion a public work of such magnitude, involving the expenditure of sixteen millions of dollars, will not be slow to avail themselves of the opportunity presented of largely extending their business. That the benefits will be at once discoverable, there can be no doubt, and yet it appears the more reasonable that the growth will be steady, rather than immediately great. It will be regular development, and not a fabulous visitation of prosperity. But the benefits will be permanent. There will be scarcely a department of business that will not receive more or less stimulation from the completion of this enterprise. Larger and independent transportation, by bringing the business of the city nearer to its customers, and by an enlargement of the area of the business field of the city, together with a procuring of increased supplies of raw materials at the lowest rates, will increase production and promote new industrial enterprises. Improved facilities will concentrate business at Cincinnati to a much greater degree than ever, and will steadily augment the commercial importance and influence of the city.

This looks only to the benefits to be derived from an increase of domestic business. How far our foreign relations are to be affected by the construction of the road, no one can now see. There are considerations other than distance that influence foreign trade. But it is a noticeable fact that the completion of this road and contemplated roads in the South, will bring Cincinnati nearer the Gulf and South Atlantic ports than to New York. To the latter, by the shortest route, is 744 miles, while to Pensacola, via Birmingham, the distance will be 738 miles, and even this may be shortened from 10 to 12 miles. To Charleston, S. C., by lines to be completed, the distance will be 682 miles; to Savannah, by proposed lines, 704 miles, and to Wilmington, N. C., 712 miles. To use lines already in operation after the Cincinnati Southern Road shall have been completed, the distance from Cincinnati to Charleston will be 770 miles; to Port Royal, 744 miles; to Savannah, 735 miles; to Mobile, 754 miles, and to New Orleans, 894 miles. The distance from Havana to New York, by sea,

is 1,280 miles, and from New York to Cincinnati, by rail, 744 miles, making the total distance from Havana to Cincinnati, via New York, 2,024 miles. From Havana to Savannah is 560 miles. From Havana to Cincinnati, via Savannah, the Cincinnati Southern Railroad, and roads now in existence south of Chattanooga, will be 1,315 miles, or a distance 709 miles shorter than by way of New York. Distances from Havana to the whole Northwest will be materially lessened, and if other circumstances are favorable, the business of the latter section with Cuba will be largely augmented. Especially will it be desirable to bring fruits by the shorter line, thus securing quicker transportation and less loss from decay. Distances from the South American ports to Cincinnati and the Northwest will be similarly reduced.

As for Chattanooga, nature has made her a great railway center. Her railroad arms reach out in all directions into seven of the most important Southern States, having a population, according to the census of 1870, of 5,887,812, and an aggregate area of 336,092 square miles. The Cincinnati Southern Railroad will render this railway available by connecting it, by the shortest possible route, with another center, into which the business of a different section converges. The character and extent of her probable development is less clearly defined than in the case of Cincinnati, but she certainly will find herself surrounded by circumstances calculated to greatly promote her commercial and manufacturing enterprises, and to give her one of the chief positions among the southern cities of the interior.

APPENDIX No. 9.

ANSWERS TO INQUIRIES IN RELATION TO THE TRADE AND MANUFACTURES OF CLEVELAND, OHIO, BY MR. WILLIAM MELHINCH, OF CLEVELAND, OHIO. 1876.

Question 1. A statement showing the quantity of grain received at and shipped from Cleveland by lake and by rail during the year 1875.

Answer—

	Bushels received.		Bushels shipped.
By lake	2,455,290	By lake	39,720
By rail	18,001,425	By rail	8,181,239
Total	20,456,715	Total	8,220,959

Question 2. A statement showing the tonnage of freight received at Cleveland from the south by rail and by canal during the year 1875, mentioning the quantities of the principal commodities received.

Answer. By canal, 394,666 tons; by rail, 1,591,462 tons.

Quantities of the principal commodities received:

	Tons.
Merchandise	102,204
Coal	644,342
Stone and lime	92,643
Lumber	82,739
Grain	261,659
Petroleum	3,448

Question 3. A statement showing the tonnage of freight shipped from Cleveland southward during the year 1875, stating the quantities of the principal commodities shipped.

Answer. By canal, 175,643 tons; by rail, 874,541 tons.

Quantities of the principal commodities shipped from Cleveland southward during the last year:

	Tons.
Merchandise	217,660
Iron	61,835
Petroleum	37,537
Manufactures	21,747
Ore	223,195
Lumber	19,193
Wood-fuel	19,782

Question 4. A statement showing the tonnage of freight received from the east by lake and by rail during the year 1875, stating the quantities of the principal commodities or classes of commodities received.

Answer. By lake, 38,583 tons; by rail, 1,007,250 tons.

The railroad companies report no specifications of quantities of principal commodities from the east.

Question 5. A statement showing the tonnage of freight shipped east from Cleveland by lake and by rail during the year 1875, stating the quantities of the principal commodities or classes of commodities thus shipped.

Answer. By rail, 744,402 tons; by lake, 2,608 tons.

The Lake Shore and Michigan Southern and the Atlantic and Great Western Railroad Companies do not report classifications of the principal commodities shipped east; therefore, cannot furnish the desired information.

Question 6. A statement showing the tonnage of freight received from the west by lake and by rail during the year 1875, stating the quantities of the principal commodities or classes of commodities thus received.

Answer. By lake, 871,560 tons; by rail, 1,254,267 tons.

Quantities of the principal commodities thus received:

	Tons.
Merchandise	102,204
Coal	206,761
Stone	86,404
Ore	306,942
Lumber	415,660
Cotton	36,589
Iron	65,425

Question 7. A statement showing the tonnage of freight shipped from Cleveland to the west by lake and by rail during the year 1875, stating the quantities of the principal commodities or classes of commodities thus shipped.

Answer. By lake, 95,947 tons; by rail, 543,957 tons.

Quantities of principal commodities so shipped:

	Tons.
Coal	330,606
Merchandise	222,462
Iron	49,378
Petroleum	37,573
Manufactures	21,747

Question 8. The estimated total tonnage of freight received by rail, by lake, and by canal during the year 1875.

Answer. By rail, 2,598,712 tons; by lake, 1,025,536 tons; by canal, 402,012 tons.

Question 9. the estimated total tonnage shipped by rail, by lake, and by canal during the year 1875.

Answer. By rail, 1,810,516 tons; by lake, 197,121 tons; by canal, 175,643 tons.

Question 10. For every one hundred cars loaded at Cleveland and bound east, about how many loaded cars were received from the east during the year 1875?

Answer. For every one hundred cars loaded at Cleveland and bound east there are one hundred and fifty-two loaded cars received from the east.

Question 11. Any statement from available statistics showing the growth of the manufacturing interests of Cleveland and the proportion of the tonnage of such products which are shipped by lake, by canal, and by rail.

Answer. The manufacturing interests of the city of Cleveland have increased over two hundred per cent. during the last eight years, and are still increasing. As there are no available statistics to refer to for exactness, would say that the best estimates that can be had go to show conclusively that this statement of increase is undoubtedly correct; and it is also estimated that from forty to forty-five per cent. of the tonnage shipped from Cleveland by lake, by rail, and by canal consists of Cleveland manufactures.

Question 12. Over what routes and by means of what fast-freight lines are freights shipped from Cleveland to Boston; also, to New York, to Philadelphia, and to Baltimore?

Answer. Freight is shipped to New York, Boston, Philadelphia, and Baltimore from Cleveland by the following fast-freight lines: Red Line, White line, and Merchants' Dispatch, Lake Shore and Michigan Southern Railroad, New York Central and Hudson River Railroad, Boston and Albany Railroad; Hoosac Tunnel line, Lake Shore and Michigan Southern, New York Central and Hudson River, and Troy and Boston Railroads; Great Western Dispatch and the South Shore Line, Lake Shore and Michigan Southern and Erie Railways; Empire Line, Lake Shore and Michigan Southern and Philadelphia and Erie Railways, and connections.

Question 13. Such statistics or other facts which you may be able to present in regard to the increase of commerce by rail between Cleveland and States south of the Ohio River. In this connection please to present any facts indicating the probable commercial advantages likely to be realized by Cleveland from the construction of the Cincinnati Southern Railway.

Answer. In the absence of any statistics, would state on reliable testimony that the following articles, viz, railroad-iron, galvanized iron, steam-machinery, petroleum and other oils, agricultural implements, furniture, wooden ware, and wrought iron and nails, are all shipped south of the Ohio River in large quantities, and the trade between Cleveland and the States south of the Ohio River has increased two hundred per cent. in the last eight years. When the Cincinnati Southern Railroad is finished all these articles, as well as many others not here enumerated, will be transported at much less rates than at present, and consequently the commerce of Cleveland will be greatly advanced.

Question 14. What commodities are shipped from Cleveland to foreign ports on through bills of lading, and to what extent are such commodities purchased by the railroad or steamer lines that transport them?

Answer. The commodities shipped from Cleveland to foreign ports on through bills of lading are little or none of them purchased by the vessel-owners. The following

comprises some of the articles so shipped, viz: Stone and marble, iron, petroleum and other oils, fire-bricks, salt and cement, nails, merchandise and manufactures.

Question 15. Please to state the relative importance of Cleveland in comparison with other cities, with respect to some of the principal commodities of her production, or of her commerce.

Answer. In regard to the relative importance of Cleveland in comparison with other cities with respect to some of the principal commodities of her production or commerce, I would state that iron in all its various forms, refined and lubricating oils, coal, lumber, agricultural implements, and wooden ware, are the principal commodities of commerce and manufacture. In oils, iron, and lumber, coal, wooden ware, and agricultural implements, Cleveland is ahead of Chicago. In all these articles except iron and coal, ahead of Pittsburgh, equal to Cincinnati in all but coal, and as for refined and lubricating oils, Cleveland is ahead of all the cities mentioned.

Question 16. Please to prepare a statement as to the amount of cotton received at and shipped from Cleveland during the year ending August 31, 1875.

Answer. Received, 36,588 tons; shipped, none.

Question 17. Please to present such information as you may be able to obtain in regard to the annual production, consumption, and value of petroleum in the United States.

Answer. In reply to the inquiry as to the production and average price of petroleum oil, I would present the following statistics, which are full and reliable:

Annual production, in barrels.

	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.
January	8,700	10,192	11,287	13,497	18,825	20,407	37,653	24,489
February	9,200	9,967	11,714	13,305	15,965	21,725	29,839	23,268
March	8,691	9,891	11,299	12,914	14,890	21,461	28,498	23,874
April	8,537	11,067	12,294	12,866	15,403	21,384	25,958	22,502
May	8,790	10,153	13,211	13,187	17,326	16,371	28,895	22,468
June	10,102	11,334	13,731	13,678	25,044	16,702	30,725	23,207
July	10,693	11,697	13,735	14,725	26,449	17,739	33,337	25,431
August	11,981	12,157	16,776	14,922	27,983	16,681	30,049	23,186
September	11,933	12,645	18,462	15,398	30,198	31,809	28,021	.....
October	10,138	13,071	18,171	15,653	14,272	30,403	29,669	.....
November	10,278	13,317	16,953	15,487	21,287	33,049	28,702	.....
December	9,737	12,844	15,178	15,418	20,825	34,980	27,682	.....

The above table gives the average daily production for each month from January, 1868, to September 1, 1875.

The average value of crude petroleum since 1864 at the wells was as follows: 1864, $7.62; 1865, $5.88; 1866, $3.43; 1867, $2.23; 1868, $3.60; 1869, $5.13; 1870, $3.40; 1871, $4.15; 1872, $3.40; 1873, $1.50; 1874, $1.00; 1875, to September 1, $1.41.

The above statement shows the average price per barrel for each year.

Estimated tonnage of all classes of freights shipped from Cleveland during the last year.

How shipped.	Tons.	Per cent. of total.	How shipped.	Tons.	Per cent. of total.
By rail, south	874,541	.....	By lake, east	2,608	.....
By rail, east	744,402	.....			
By rail, west	543,957	.....	Total by lake	98,555	4
Total by rail	2,162,900	90	By canal	175,643	6
By lake, north and west	95,947	.....	Total	2,437,098	100

SUMMARY.

How shipped.	Tons.	Per cent. of total
Total by rail	2,162,900	90
Lake and canal	274,198	10
Total	2,437,098	100

APPENDIX No. 10.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF TOLEDO, BY MR. C. F. WALES, SECRETARY OF THE TOLEDO BOARD OF TRADE 1876.

Question 1. Please to present statistics showing the commerce of Toledo, Ohio, during the year ending December 31, 1875.

Answer. 1st. Exhibit of flour and grain received and shipped by lake and rail:

RECEIVED.

	Bushels.
Flour, 581,558 barrels	2,907,790
Wheat	6,587,755
Corn	15,897,842
Oats	3,959,438
Rye	17,907
Barley	511,398
Total	29,872,130

SHIPPED.

	By rail.	By lake.
Flour	615,724	76,393
Wheat	2,324,822	2,802,117
Corn	12,350,254	3,567,321
Oats	3,356,532	460,261
Rye	10,654	400
Barley	335,877	20,572
Total	18,993,863	6,927,064

2d. Exhibit of tonnage of freight received at Toledo from the South, by rail and canal, during the year 1875:

	Tons by rail.	Tons by canal.
Flour, 125,873 barrels	1,441	11,146
Wheat, 801,442 bushels	18,411	5,631
Corn, 1,572,555 bushels	34,007	10,024
Oats, 527,305 bushels	7,278	1,158
Rye, 2,550 bushels		71
Barley, 8,500 bushels	201	2
Lumber, 14,912,393 feet	16,310	2,320
Shingles, 2,304,100	380	.....
Staves, 1,774,472	2,550	420
Lath, 50,000		2
Iron, 5,251,603 pounds	26,258	.....
Coal	48,388	.....
Wool, 591,000 pounds	295	.....
Hides, 1,277,176 pounds	638	.....
Bacon, 1,522,800 pounds	761	.....
Dressed hogs, 899,169 pounds	449	.....
Salt, 25 pounds		.....
Whisky, 10,753 barrels	215	.....
Cotton, 57,349 bales		.....
Merchandise, 54,953,961 pounds	27,374	102

3d. Exhibit of tonnage of freight shipped southward from Toledo:

	Tons.
Flour, 6,272 barrels	627
Wheat, 782,589 bushels	23,477
Corn, 508,714 bushels	14,243
Oats, 348,250 bushels	5,577
Barley, 233,149 bushels	5,595

	Tons.
Lumber, 68,118,137 feet	85,150
Staves, 1,662,100	2,770
Shingles, 55,093,200	9,180
Lath, 18,733,650	4,680
Iron	2,911
Salt, 180,980 barrels	27,147
Coal	12,530
Seeds, 927,815 pounds	463
Sugar	99
Merchandise	73,854

4th. Statement of tonnage of freights shipped East from Toledo by rail and lake:

	Tons by rail.	Tons by lake.
Flour	63,344	4,481
Wheat	69,744	84,063
Corn	345,807	99,884
Oats	53,704	7,364
Lumber	58,950	4,540
Shingles	4,790	.....
Staves	21,190	2,980
Lath	1,660	.....
Iron	7,900	1,630
Seeds	1,057	.....
Whisky	261	.....
Hides	7,113	.....
Dressed hogs	3,039	.....
Coal	23,042	.....
Bacon	40	.....
Wool	854	.....
Salt	1,568	.....
Cotton	14,770	.....
Merchandise	56,211	25,000

5th. Statement of tonnage received from the West via rail and lake:

	Tons by rail.	Tons by lake.
Flour	45,127	.....
Wheat	163,458	1,068
Corn	396,726	.....
Oats	52,794	.....
Rye	429	.....
Barley	6,003	.....
Lumber	44,710	116,600
Shingles	8,160	2,730
Staves	12,710	.....
Lath	660	3,680
Iron	11,973	.....
Iron ore	.....	12,281
Hides	10,733	.....
Seeds	2,276	.....
Dressed hogs	2,198	.....
Salt	3,293	25,487
Whisky	773	.....
Bacon	4,392	.....
Wool	245	.....
Cotton	15,564	.....
Coal	.....	.....
Merchandise	90,046	.....

Lake via canal at Toledo has been diverted by the railways, and latterly we receive comparatively little freight from points south of the Ohio River. Doubtless Toledo would derive some little benefit from the construction of the Cincinnati-Louisville Railway, but it would be slight.

Question. 2. Please to present a statement of commodities shipped from Toledo to foreign ports on through-bills, &c.

Answer. In former years when the production of clover-seed has been large, the shipments of that article have been great, and generally on through bills of lading, in quantity ranging from 30,000 to 70,000 bags of 2½ bushels, and nearly all has gone via New York. The present season but little seed is going forward and more of corn for Europe, but the quantity is not large. None purchased by railway or steamer lines. The direct foreign shipments are nearly or quite all via New York and Boston and Portland; mostly via the two last named latterly. No large quantity the past year.

Question 3. The relative importance of Toledo in comparison with other cities with respect to some of the principal commodities of commerce.

Answer. In flour and grain Toledo ranks as the second receiving-point from first hands. The statistics for several years past classifies the leading grain receiving and shipping points, viz: 1st, Chicago; 2d, Toledo; 3d, Milwaukee. Toledo ranks first in shipments of hard wood, lumber, and logs, and staves, and in many other articles approximates Chicago.

Question 4. Please to present a statement of cotton received and shipped at Toledo during the year ending August 31, 1875.

Answer. Received 36,874 bales. A very considerable part of the cotton received goes east through Canada, some to Europe, and the remainder to the manufacturing districts of New England.

Question 5. Please to state the rule observed by you in reporting grain received. Do you include only such products as are actually sold at Toledo, or all products passing through Toledo?

Answer. I report as receipts of grain all grain that goes into elevator to be sold in this market or that is transferred by elevator from railway to water routes. Of coarse products I include those handled here, *i. e.*, that which pays a direct tribute by being transferred from one route to another or goes into warehouses to await orders for shipment or sale, or that goes on the dock, say lumber, staves, salt, &c., to await removal.

"Of the total amount of grain received at Toledo in 1875, what proportion came direct from Chicago or Milwaukee?" Of the total receipts of grain at Toledo in 1875, we received from Milwaukee by lake 15,600 bushels; that was all that was received, (of which account was made by me,) directly or indirectly, from the cities named. I have so far been unable to reconcile myself to that kind of statistical accuracy which justifies the use of through-receipts and shipments as local. This is practiced, I know, by some statisticians for the purpose of swelling local commercial reports, and for that reason it is at present impossible to approximate the movement of grain at some of the leading receiving and shipping points. The credit for the receipts and shipment of the grain belongs to that point where it was received from first hands and then shipped in quest of a market, and no mention should be made of it until it arrives at its destination and goes into elevator, when it may then be reported as an arrival in, and balances the movement eastward from, the interior point.

Question 6. Facts in regard to southern railroad traffic between Toledo and points in Southern Ohio.

Answer. I have no data from which to make a comparison. There has been a very large increase in the southern movement in building-materials within a few years past. The shipments of lumber, lath, and shingles have quadrupled within a few years, and during 1875 the bulk of our shipments of those articles by rail were southerly—mainly to points near the Ohio River—north of the river.

Question 7. Facts as to the relative growth of southern and eastern commerce.

Answer. I have no statistic covering this subject. If I include the southern and southeastern traffic, the growth has been proportionately much greater than that going directly east, but this is based entirely upon observation.

Question 8. Statistics showing the increase of wealth and population of Toledo during the last twenty-five years.

Answer. 1st. Population:

1850, as per United States census	3,829
1860, as per United States census	13,784
1865, as per local census	19,509
1866, as per local census	24,401
1868, as per local census	30,068
1870, as per United States census	32,754

There has been no census taken since 1870. In 1875, (April,) as estimated by the popular vote, the population was 42,384; and by the vote of October, 1875, about 48,000. The general estimate is 48,000 to 52,000.

2d. *Wealth.*—I know of no better method of answering this than by reference to the books of the county auditor, showing the taxable valuation of property, and below is a comparison for twelve years:

1864	$6,441,270
1865	7,392,700
1866	7,990,850

1867	$8,305,860
1868	8,811,680
1869	9,079,400
1870	9,452,470
1871	16,052,780
1872	16,518,850
1873	16,821,720
1874	17,474,860
1875	19,798,580

For several years past, owing to the large amount of labor which it required, I have omitted in my statistics of Toledo all reference to the money-value of the receipts and shipments of produce, &c. The following table shows the growth in eight years, from 1858 to 1866, inclusive, since which time this work has been omitted:

	Imports.	Exports.
1858	$31,700,085	$35,460,031
1860	46,727,754	52,243,627
1864	81,180,366	95,905,758
1865	158,967,000	177,547,671
1866	161,652,597	181,329,496

To estimate the value of the business of Toledo in 1875, I should base it upon a comparison of the general business with that of the year 1866, when our grain trade was less than one-half of 1875, and every other article of produce shows a corresponding increase; we therefore place our estimate at double that of 1866, viz, $323,305,000, an estimate which every one will admit is not unreasonably large, and I feel confident that a careful investigation would show it to be much larger.

APPENDIX No. 11.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF BOSTON, THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, AND THE TRANSPORTATION LINES OF THE STATE OF MASSACHUSETTS, BY MR. CURTIS GUILD, OF BOSTON, MASS. 1876.

Question 1. Please to describe the present Hoosac Tunnel Fast-Freight Line, mentioning the route over which the cars composing that line are run; whether such line is co-operative, (that is, owned by the various railroad companies,) or a private line owned by individuals. If co-operative, please to mention the names of the roads composing it; also, please to state approximately the number of cars now employed on this line.

Answer. The present Hoosac Tunnel Fast-Freight Line from Boston, Mass., to Troy, N. Y., is a co-operative line, made up as follows: 1st. The Fitchburgh Railroad, from Boston to Fitchburgh. This corporation on the 1st of January, 1874, leased the Vermont and Massachusetts Railroad, from Fitchburgh to Greenfield, for nine hundred and ninety-nine years, so that practically the first-named road reaches from Boston to Greenfield. The terms of this lease will be found in the report of the railroad commissioners of Massachusetts for 1874, page 594. 2d. The Troy and Greenfield Railroad, which, when taken by the State of Massachusetts, included the Southern Vermont Railroad, purchased by it in 1860. This is leased perpetually to the Troy and Boston Railroad Company, for $12,000 annually. 3d. The Troy and Boston Railroad from the Vermont and New York State line to Troy, N. Y. For business purposes contracts have been made by which, in addition to the roads mentioned, the Boston and Maine, Eastern, New York Central and Hudson River, Lake Shore and Michigan Southern, Great Western, (of Canada,) Michigan Central, Cleveland, Columbus, Cincinnati, Cincinnati and Indianapolis, Indianapolis and Saint Louis, Jefferson, Madison and Indianapolis, Detroit and Milwaukee, Saint Louis, Alton and Terre Haute, and the Boston, Barre and Gardiner Roads have been united for through-transportation. This is in no sense a consolidation, but merely a business arrangement, into which other roads may come, by furnishing their quota of cars. The number of cars now in use is about fourteen hundred, and will be increased as business increases.

Question 2. Please to mention the roads composing the present railway line from Boston via the Hoosac Tunnel to its connection with the New York Central Railroad, mentioning the various roads and length of each road. Please also to state the nature of the organization in the State of Massachusetts and in the State of New York.

Answer. The roads composing the line from Boston via the Hoosac Tunnel to its connection with the New York Central Railroad at Troy, with the length of each, are as follows: Fitchburgh Railroad, (including Vermont and Massachusetts,) from Boston to Greenfield, 106 miles; Troy and Greenfield Railroad, from Greenfield to Vermont State line, 44 miles; and the Troy and Boston Railroad, (including Southern Vermont,) from Vermont and Massachusetts State line to Troy, N. Y., $41\frac{8}{10}$ miles. The Fitchburgh Railroad Company is organized under a charter granted by the State. The Troy and Greenfield Railroad, including the tunnel, is owned by the State of Massachusetts; and the Troy and Boston Railroad Company is organized under a charter for the State of New York in 1848, and has since been made subject to the provisions of the general railroad law of the State of New York.

Question 3. Please to mention the various roads entering Boston which have connections to the Western States, describing the roads.

Answer. The following roads from Boston have connections with the West:

I. The Eastern and the Boston and Maine, from Boston to Portland, thence to Detroit and Chicago via Grand Trunk and Michigan Central.

II. The Boston and Lowell via Boston, Lowell, and Nashua, Concord, Northern New Hampshire, and Central Vermont, to Ogdensburgh, thence to Detroit and Chicago via Grand Trunk and Michigan Central.

III. The Hoosac Tunnel Line via Fitchburgh to Troy, N. Y., thence west by New York Central or Albany and Susquehanna and Erie.

IV. The Boston and Albany, from Boston to Albany, thence west by New York Central.

The first-named line transports considerable freight at times between Boston and the West, but is not usually reckoned as a competing route.

Question 4. Please to mention as concisely as possible the various plans which have been proposed for utilizing the Hoosac Tunnel in the interest of Boston and of the State of Massachusetts, and in the same connection the policy now pursued by the State with regard to the tunnel and the entire line of which it forms a connecting link.

Answer. The most prominent plans for utilizing the tunnel will come into one of the following four general classes:

I. The toll-gate plan, under which the commonwealth retains control of the tunnel, and allows freight and passenger trains to pass through it at certain rates.

II. The consolidation schemes under which the property of the State in the Troy and Greenfield Railroad will be consolidated with other lines, and placed under the control of one management. (The details of this plan are embodied in the bill presented to the legislature of Massachusetts by the corporators of the Hoosac Tunnel and Western Railroad Company, January, 1875. It will be found on page 30 of their report, which accompanies, marked "A 3.")

III. State ownership, the purchase by the State of the lines which connect Boston with Troy; some plans proposing State ownership even beyond that point.

IV. The sale of the tunnel to some corporation, a plan which has few friends.

V. The plan of the Bay State Transportation League, which will be found in accompanying documents.

The policy now pursued is embodied in the law passed in 1875, chapter 77; *ride* general laws passed by the legislature of Massachusetts, 1875, herewith accompanying. Further detail of these plans will be found in the "report of the corporators" hereinbefore mentioned, pages 21–24. The State is not financially interested in any other road, except the New York and New England Railroad, in which it holds 3,600 shares of stock. The State has no "plan" in relation to this road, except to hold the stock until some future day, precisely as individual stockholders do.

Question 5. Please to state approximately the cost of the Hoosac Tunnel and any facts of importance which may occur to you as to its ownership.

Answer. The cost of the tunnel cannot be accurately stated, owing to the fact that moneys appropriated for, and expended upon, the enterprise have been used for the construction of the tunnel and the Troy and Greenfield Railroad, and so far as accessible records are concerned, no separate accounts are to be found. The cost is thus stated by the auditor of the commonwealth in his last annual report:

Issued to Troy and Greenfield Railroad Company before possession was taken by the State	$970,680 00
Since possession was taken by the State, there had been expended to January 1, 1875, including interest paid on scrip, less material sold, rents, &c	12,003,142 31
Paid in 1875 to W. & F. Shanly	131,000 00
Paid in 1875 interest on scrip	500,367 09
Paid in 1875 for contracts, engineering, &c	1,571,213 99
	15,176,403 39
Deduct receipts from rents, tolls, &c	82,492 78
Total cost to January 1, 1876	15,093,910 61

Two unpaid warrants remained in the treasury at the close of the year, amounting to $30,053.05, which, being added to the above, makes the aggregate cost $15,123,963.66. There was also an unexpended balance of appropriation amounting to $1,575,252.30, which will be required to complete the work, which the State will do. The cost, therefore, to date, is as follows:

Expended to January 1, 1876	$15,123,963 66
Unexpended appropriation	1,575,252 30
Total cost to the State	16,699,215 96

To this should be added the amount subscribed by the various towns in the State on the line of the Troy and Greenfield Railroad. This cannot be accurately ascertained, and is variously estimated at from $2,000,000 to $3,000,000. The cost of the tunnel and railroad will not vary much from $20,000,000. As to its ownership: the Troy and Greenfield Railroad Company was incorporated in 1848, to construct a road from Greenfield, Mass., to the New York or Vermont State line. In 1855, under chapter 226,

Acts of 1854, the State loaned the company $2,000,000 to enable it to construct the tunnel. A mortgage of the road, dated July 28, 1855, was given to the State to secure this loan. In 1860 another mortgage (bearing date July 6, 1860) was executed by the corporation in behalf of the State, pursuant to chapter 202 of the acts of 1860. On the 5th of March, 1862, a third mortgage was executed as security for the same loan.

These facts are from the opinion of Attorney-General Prain, which will be found on pages 11–14 of Senate document No. 112, bearing date March 9, 1874, which is herewith submitted:

I. The closing paragraph on page 14 embodies the opinion of most of the best lawyers in the State. The Troy and Greenfield Railroad Company, however, takes a different view, and claims that it is entitled to resume possession of the property upon payment of the $2,000,000 loan, to secure which the road was mortgaged and finally taken possession of by the State. This claim will be found embodied in a memorial recently presented to the Massachusetts legislature, which will be found in Senate document No. 48, herewith inclosed.

II. There is no probability that this claim can be sustained, and the ownership of the property unquestionably vests in the commonwealth.

Question 6. Please to state the amount of interest now paid by the State of Massachusetts on bonds or other obligations contracted for the construction of railroads, mentioning the amount paid toward the two or three principal roads or parts of roads.

Answer. Massachusetts is now paying interest on the following bonds issued for the assistance of railroads: Southern Vermont, $200,000, 5 per cent.; Troy and Greenfield, $13,569,972, 5 per cent.; and Boston, Hartford and Erie, $3,599,024, at 5 per cent. Total amount of bonds, $17,368,996; total amount of interest annually, $868,449.80.

Question 7. Please to state what proportion of the entire amount raised by the State from taxation is required for the payment of such interest.

Answer. The amount raised by the State by direct taxation has been $2,000,000 each year for the past two years. This year it has been reduced to $1,800,000. The amount of taxation in the State, including State, county, municipal, and highway taxes, in 1875, was $27,712,396, besides which, about $2,280,000 is collected by the State, as special taxes on corporation bank-stocks, savings-banks, and insurance companies, making a total of direct and indirect taxation of about $30,000,000 annually.

Question 8. Please to mention the year in which the Hoosac Tunnel was begun, and the year when completed.

Answer. The Hoosac Tunnel was begun about 1853, but very little was accomplished until 1855. The final blast which connected the two headings of the tunnel was made on the 27th of November, 1873. The first train passed through the tunnel February 9, 1875. The first freight-train passed through April 5, 1875, and the first passenger-train July 8, 1875. The first passenger-train over the Troy and Greenfield Railroad, and through the tunnel to Troy, passed on the 13th of October, 1875, being an excursion-train with the governor and council. The tunnel is not yet completed, though trains are running regularly through it. The existing contracts call for its completion by July 1, 1876, and it will doubtless be nearly finished by that date.

Question 9. Please to describe the contest which has been going on for several years in regard to the transportation of Boston freights to the West, between the Boston and Albany and the Grand Trunk and the Central Vermont lines, and state the terms of the present agreement under which Boston freights are made equal to freights from other cities. Under what arrangement is it supposed that such agreement has been brought about?

Answer. For several years the Grand Trunk and Central Vermont Roads, in fixing the rates of freight to and from the West, have claimed that they should be allowed to make lower rates than the Boston and Albany, in consideration of the fact that their line was longer, both in distance and time, and unless they made lower rates they could not get business in competition with the Boston and Albany. During 1875 there was a sharp contest between these lines, the result being a reduction of rates to a very low point. Eventually the other trunk-lines became involved in it, being compelled to reduce rates to the other seaboard cities in order to prevent traffic which belonged to them from coming to Boston.

After this "railroad war" had continued several weeks, the officers of the various companies interested met and agreed upon a tariff by which all should be bound, it being the same for all the roads. The terms of this arrangement have never been made public, and cannot be ascertained. The officers all deny that there is any "pooling" of earnings, and assert that there is merely an agreement to establish uniform rates. Whether any compensation is made to the Grand Trunk cannot be ascertained. A part of the arrangement was that the Boston and Albany should withdraw its solicitors of freight, while the others were at liberty to solicit business. The arrangement has already been broken, and at this writing (May 1) a general "railroad war" seems to be impending.

Question 10. Please to describe the route from Boston to Saint Albans, known as the Central Vermont line. Has that line one or two connections into Boston?

Answer. The Central Vermont line proper is made up as follows: The Boston, Lowell and Nashua Railroad, from Boston to Nashua, N. H.; the Concord Railroad, from Nashua to Concord; the Northern New Hampshire, from Concord to White River Junction; and the Central Vermont thence to Saint Albans, Vt. It has also another connection with Boston via Fitchburgh Railroad, from Boston to South Ashburnham, Mass.; thence by Cheshire Railroad to Bellows Falls, Vt.; thence by Sullivan Railroad (leased by Central Vermont) to White River Junction, and thence to Saint Albans direct. Another route is from Bellows Falls via Rutland and Burlington Railroad to Essex Junction, Vt.; thence to Saint Albans over Central Vermont. These routes will be found marked in brown on map accompanying.

Question 11. Does the increase of the foreign commerce of Boston depend primarily upon an increase of her export trade or upon an increase of her import trade? In other words, which waits upon the other?

Answer. The increase of the foreign commerce of Boston depends mainly upon the increase of the export trade. A considerable amount of foreign freight for Boston comes to New York, at which port vessels are surer of obtaining a return-cargo. There are times when the opposite is true, there being more freights offering from Boston than can be carried, but as a rule it may be said that the increase of the foreign commerce of Boston depends upon an increase of its export trade.

Question 12. What efforts are now being made for the construction of an independent line of railway connecting the Hoosac Tunnel line with some point on the Niagara River, such line running north of the New York Central Railroad, and touching at points on Lake Ontario?

Answer. The details of this plan will be found in documents accompanying, being publications of the Bay State Transportation League, an organization whose design is to secure such legislation as shall authorize the construction of this line. The scheme has been tried in several successive legislatures, thus far without success. The plan has the indorsement of many of our leading business men, and is as strenuously opposed by others.

The State of Massachusetts cannot secure the construction of a railroad through the State of New York under the provision of the general railroad law of that State. Under that law twenty-five persons, any or all of whom may be citizens of Massachusetts, can form a corporation and build a railroad.

Question 13. Please to describe and mark on a railroad-map the line from Boston via Poughkeepsie Bridge and the connection west of such bridge which that line is expected to form with the Erie and Pennsylvania Railroads and thence to the West, mentioning the particular advantages which it is supposed such line will afford for the transportation of coal from the Pennsylvania mines to the manufacturing establishments of Massachusetts and other New England States, and also the prospective value of the line as a western connection.

Answer. The material from which the answer to this inquiry may be derived will be found in accompanying documents marked "[A 15] 1." The route will be found marked upon map accompanying, (in envelope marked "[A 15] 2") in light yellow. The finished route from Boston to Poughkeepsie is by either the New York and New England Railroad to Willimantic, thence over Hartford, Providence and Fishkill Railroad to Hartford, from Hartford to Millerton, N. Y., via Connecticut Western, and from Millerton to Poughkeepsie, over Poughkeepsie, Hartford and Boston Railroad. An unfinished route leads from Hartford to Waterbury, Conn., via Hartford, Providence and Fishkill Railroad, whence an unfinished road 76 miles in length leads to Poughkeepsie. Still another route is from Boston to Hartford via Springfield or Westfield, and thence westward as before. Beyond the Hudson River the routes and connections are described in a slip attached to the fourth page of accompanying document hereinbefore mentioned, [A 15] 1.

Question 14. Does either the Boston and Albany Railroad or the Central Vermont Railroad to any extent purchase grain for the purpose of procuring freights over its line, and to what extent do the steamer-lines out of Boston purchase grain for the purpose of making up their cargoes to Europe?

Answer. These railroads, I am informed by their officials, do not buy grain. The Boston and Albany did at one time, in order to assist in the establishment of this traffic and retain the steamer-lines here, but there is now no need of doing this.

Question 15. Have freights been shipped from Boston to the West to any extent during the last year by coastwise steamer-lines connecting with the Erie Railway at New York, with the Pennsylvania Railroad at New York and Philadelphia, and with the Baltimore and Ohio Railroad at Baltimore?

Answer. Quite a large business has been done during the past two years, in shipping freight by coastwise steamers from Boston to the West, via New York, Philadelphia, and Baltimore. In order to obtain this business the Erie Railroad, the Pennsylvania Railroad, and the Baltimore and Ohio Railroad have taken freights at rates lower than those made by the direct lines west from Boston. A few months ago an arrangement

was made, the details of which cannot be ascertained, by which uniform rates were established, since which time there has been less business obtained by the water and rail lines.

Question 16. Are such lines considered as competitive lines in the arrangements between the several trunk-lines as to west-bound freight-rates between the Atlantic seaports and the West?

Answer. These lines are considered competitive to a certain extent, but not for any large portion of the traffic between Boston and the West.

Question 17. What combinations exist at the present time between any one or more of the railroad-lines with ocean steamer-lines out of Boston to Europe?

Answer. There is no "combination" between railroads and steamer-lines from Boston to Europe. In some instances through rates of freight are made on merchandise from points in the West to Liverpool, the amount received being divided between the steamers and the railroads on a basis arranged beforehand.

In other cases the steamship companies make contracts with certain freight-lines, and take through freights between Europe and the West at fixed prices, paying the railroad companies as any individual would.

Question 18. In the shipment of goods from the West to Boston, or from Boston to the West, do any of the roads enter into contracts with individuals at rates below those charged the public generally, and, in the opinion of merchants, are such discriminations favorable to, or prejudicial to the commercial interests of Boston?

Answer. There is a prevailing impression among Boston merchants that some companies make contracts at less than schedule rates with large shippers of freight, but this is not admitted by the railroad companies, and as the contracts are private, and it is for the interest of both parties to maintain secrecy, no details can be stated. If such contracts are made, the discriminations are in no way prejudicial to the commercial interests of Boston.

Question 19. Please to state generally the provisions of law now in force relative to the regulation of freights and fares in the State of Massachusetts.

Answer. The provision of law now in force in relation to the regulation of fares and freight-rates in Massachusetts may be found in the general railroad law referred to in answer to inquiry No. 17, to wit, chapter 372 of the act of 1874, more especially in sections 133, 135, 136, 137, 138, 142, inclusive.

Question 20. Please to present a statement showing the total number of passengers and total tons of freight carried by the Boston and Albany Railroad each year, from 1855 to 1875, inclusive.

Answer. Table showing number of passengers and tons of freight carried by the Boston and Albany Railroad, from 1865 to 1875, inclusive:

	Number of passengers.		
1865	Boston and Worcester	2,032,342	
	Western	1,010,373	
			3,042,715
1866	Boston and Worcester	2,663,825	
	Western	1,046,836	
			3,710,661
1867	Boston and Worcester	2,887,244	
	Western	1,028,221	
			3,915,465
1868			3,622,114
1869			4,291,015
1870*			3,754,733
1871			4,744,904
1872			5,247,576
1873			5,757,624
1874			5,889,382
1875			5,964,477

* The time of making annual returns was changed this year from November 30 to September 30; so that returns for 1870 cover but ten months. The returns after 1870 end each year with September 30.

		Tons of freight.	
1865	Boston and Worcester	390,171	
	Western	693,754	
			1,083,925
1866	Boston and Worcester	549,319	
	Western	884,564	
			1,433,883
1867	Boston and Worcester	597,400	
	Western	934,605	
			1,532,005
1868			1,319,059
1869			1,613,940
1870*			1,531,149
1871			2,209,332
1872			2,732,907
1873			2,884,520
1874			2,668,403
1875			2,439,472

*The time of making annual returns was changed this year from November 30 to September 30; so that returns for 1870 cover but ten months. The returns after 1870 end each year with September 30.

NOTE.—In the first three years covered by above table, what is now the Boston and Albany Railroad was composed of two separate roads, the Boston and Worcester and the Western. I have added the traffic of the two roads.

Question 21. Inclosed herewith you will find a blank marked "A," for the purpose of stating the rates in force on west-bound freights, from 1865 to 1875, inclusive.

Answer. Freight tariff in force from Boston to Chicago on the 30th of June and 31st of December of each year from 1865 to 1875:

Year.	First class.		Second class.		Third class.		Fourth class.	
	June 30.	December 31.	June 30.	December 31.	June 30.	December 31.	June 30.	December 31.
1865	1.83	2.15	1.51	1.80	.85	.90	.82	.82
1866	1.88	1.88	1.60	1.60	1.27	1.27	.82	.82
1867	1.88	2.02	1.60	1.70	1.27	1.38	.82	.86
1868	1.88	2.02	1.60	1.70	1.27	1.38	.82	.86
1869	1.60	1.50	1.60	1.30	1.27	1.00	.82	.80
1870	1.50	1.80	1.30	1.50	1.00	1.20	.80	.80
1871	1.00	1.25	.90	1.10	.70	.85	.55	.65
1872	1.25	1.25	1.10	1.10	.85	.85	.65	.65
1873	.75	.75	.70	.70	.60	.60	.45	.45
1874	1.00	.75	.90	.70	.75	.60	.60	.45
1875	1.00	.30	.80	.25	.75	.20	.60	.20

The above figures show the regular tariff rates at the dates mentioned—rates which were charged when no others were agreed upon. During a considerable portion of this time, however, there was much "cutting" of rates, and much lower figures were made on special contracts. These it is impossible to obtain, each transaction having been made on its own merits and without publicity.

APPENDIX No. 12.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF BUFFALO, AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY, BY MR. WILLIAM THURSTON, SECRETARY OF THE BOARD OF TRADE OF BUFFALO. 1876.

Question 1. Please present a statement exhibiting the reduction in the actual cost of transportation on the lakes during the last ten years by the construction of vessels of greater carrying capacity than those formerly used, and by the introduction of steamers towing barges.

Answer. Fifteen to twenty years ago sail-vessels of 10,000 to 20,000 bushels grain-capacity, were a fair average of the craft then in use. The rates paid for freight were profitable. The class of vessels recently built carry from 40,000 to 60,000 bushels of wheat and corn and 80,000 to 100,000 bushels of oats. Transportation charges are lessened by the increased capacity as expenses are lower in proportion. Number of crew per vessel of 25,000 to 35,000 bushels capacity, say, 10 men; one of 60,000 bushels, from 12 to 14, according to rig.

Largest-size propeller would not require more than one fireman and two deck-hands over the ordinary-sized propeller, thus enabling larger vessels to make greater profits.

Illustration: A vessel of 600 tons would carry, say, 20,000 bushels of wheat at 10 cents freight from Chicago to Buffalo $2,000
Up freight on 600 tons of coal, at $1 600

2,600
Expenses both ways 1,500

Leaving a balance of 1,100

A vessel of 1,800 tons would carry, say, 60,000 bushels of wheat, at 6 cents freight from Chicago to Buffalo $3,600
Up freight on 1,500 tons of coal, at $1 1,500

5,100
Expenses both ways, say 2,500

Leaving a balance of 2,600

If freight reckoned at 10 cents, the balance would be 5,000

A vessel averages eight trips per annum to and from Buffalo and Chicago.

Cost of construction of sail-vessel, including all necessary outfit, &c., $1 per bushel of sixty pounds, or $33.33 per 2,000 pounds.

Extra outlay of capital in constructing the large vessel is made up by the larger returns of freight-money or increased earnings; and where a small vessel at a low rate of freight could not begin to pay even expenses of crew, leaving out insurance, &c., a large vessel at low rates (say 2 cents per bushel) can make enough to pay all expenses and leave a small margin for interest on the money spent in constructing the vessel.

Rates of freight vary, of course, according to supply and demand. It is estimated that one-third of the lake-fleet was laid up in ordinary the whole of 1875; this one-third comprised the small vessels using sails for their motive power. It was impossible to run this class of vessels except at a loss at the ruinous rates of freight which prevailed.

Sharp competition between the lakes, canal, and river route to Montreal *vs.* the rail-road routes to Boston, New York, Baltimore, Philadelphia, as well as to Montreal in 1875 reduced the lake and canal freights to so low a rate that the building of canal-boats practically ceased, and the few lake-vessels launched were of large tonnage, either as propellers or barges.

The following statement shows the average and largest size, in tons, of vessels navigating the inland lakes, viz, Erie, Huron, Michigan, Superior, and Ontario, during the years specified:

Average size—tons.

	1865.		1870.		1875.	
	Registered tonnage.	Tons capacity.	Registered tonnage.	Tons capacity.	Registered tonnage.	Tons capacity.
Propellers	750	800	751	800	1,199	1,300
Propellers, towing barges	None	None	439	550	471	600
Barges, in tow propellers	None	None	289	550	400	800
Sailing-vessels	194	388	223	446	300	600

Largest size—tons.

	1865.		1870.		1875.	
	Registered tonnage.	Tons capacity.	Registered tonnage.	Tons capacity.	Registered tonnage.	Tons capacity.
Propellers	1,416	1,450	1,483	1,500	2,082	2,300
Propellers, towing barges	None	None	804	1,200	1,660	1,800
Barges, in tow propellers	None	None	660	1,300	1,180	1,800
Sailing-vessels	585	1,200	760	1,500	1,444	2,100

Question 2. Please to present a statement exhibiting the reduction in the actual cost of transportation on the Erie Canal in consequence of deepening the canal and the completion of a line of double locks throughout.

Answer. There are no figures to base an answer upon. Conversation and illustrations from practical men resulted in eliciting the fact that the reduction of time on the round trip was fully three days; two days on down and one day on up trip. The gain financially was $40 per boat, say $30 on down and $10 on up freight. The year 1875 was the first year that forwarders had the full advantage of double locks all through from Buffalo to Troy. About fifteen years have elapsed since the prism of the canal was increased from 40 feet wide and 4 feet deep to present dimensions of 70 feet wide and 7 feet deep. During the time the contract system of repairs, &c., was in existence navigation was almost entirely destroyed; sometimes it took a month to get a boat through the canal, in consequence of low water and bad condition generally. Three years have elapsed since abolishment of contract-system, and it is only this season, 1875, and the latter part of 1874, that the present good condition was obtained. A forwarder stated, in answer to my question, "The time saved going and coming is equivalent to about three cents per bushel per trip, taking into consideration the better condition of the canal by the abolition of the contract-system of repairs, having the full 7 feet of water nearly all the way and the facilities given for increased quickness of lockage through the completion of the double locks." The conclusion arrived at by the State engineer of the canals in 1863 was that the first enlargement of the locks reduced the cost of transportation 50 per cent., and he estimated that a re-enlargement so that boats of 600 tons capacity, (22 feet beam,) with locks 26 feet wide, with 8 feet of water, "could navigate the canal at a further reduction, say one-half the present cost."

Tons of coal received and shipped at Buffalo, by lake, in the years named.

RECEIVED.

Year.	Bituminous.	Anthracite.
1866 ..... tons..	68,142	None.
1867 ..... do...	101,108	Do.
1868 ..... do...	91,457	Do.
1869 ..... do...	99,460	Do.
1870 ..... do...	94,769	Do.
1871 ..... do...	88,517	Do.
1872 ..... do...	78,879	Do.
1873 ..... do...	87,724	Do.
1874 ..... do...	67,467	Do.
1875 ..... do...	32,767	Do.
1876 ..... do...	21,418	Do.

SHIPPED.

Year.	Anthracite.	Bituminous.	Blossburgh or semi-bituminous.
1866 to 1872.....tons..	No record kept....	.....	.....
1873 ..... do....	510, 443	None	60,000
1874 ..... do....	344, 500	....do	40,000
1875 ..... do ..	389, 722	....do	50,000
1876 ..... do....	321, 455	.....	40,000

Totals in—

	Tons.
1873	570, 443
1874	384, 500
1875	439, 720
1876	361, 455

Statement showing the tonnage of grain received at Buffalo by lake for eleven years.

Year.	Flour.	Wheat.	Corn.	Oats.	Barley.	Rye.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons*	*Tons.*
1866	131, 354	319, 386	781, 054	163, 639	38, 553	34, 873	1, 468, 859
1867	144, 005	356, 390	500, 461	174, 930	43, 262	26, 299	1, 245, 347
1868	150, 273	376, 656	470, 513	164, 979	15, 290	21, 525	1, 199, 236
1869	159, 848	576, 855	323, 383	87, 849	15, 623	3, 530	1, 167, 088
1870	147, 039	616, 702	25, 848	141, 556	44, 707	17, 532	993, 384
1871	127, 807	678, 187	731, 101	144, 102	46, 726	30, 661	1, 756, 584
1872	76, 250	429, 149	1, 020, 009	96, 800	74, 134	8, 450	1, 704, 792
1873	125, 920	918, 551	799, 423	95, 557	49, 530	25, 395	2, 014, 376
1874	140, 400	866, 942	649, 062	68, 489	13, 150	1, 636	1, 739, 679
1875	101, 766	917, 600	460, 749	69, 140	4, 585	4, 416	1, 558, 256
1876	80, 241	566, 238	586, 315	38, 303	22, 801	21, 050	1, 314, 948

NOTE.—The receipts by Grand Trunk Railroad came into Buffalo by the steamer International prior to 1874, and were reported to the custom-house as arrivals by lake. Since 1873 said receipts are included in railroad receipts.

Question 3. Please to mention rail rates which operate in such manner as to discriminate against the commercial interests of Buffalo?

Answer. 1. Average discrimination against Buffalo on flour from 10 to 25 cents per barrel during the year 1875. This in regard to shipments to seaboard direct from Milwaukee and points adjoining, and where it was shipped to Buffalo and then ordered reshipped again to seaboard.

2. During 1875 the freight on grain from Toledo averaged 25 cents per 100 pounds to Pennsylvania and New York points that take New York rates. During the same period freight from Buffalo was at the same rate to these points, making a discrimination against Buffalo on total freight from Toledo to Buffalo of 13 cents per 100 pounds.

3. During the summer of 1875 grain could be shipped from Buffalo to Allentown, Bethlehem, and Catasauqua, in Pennsylvania, at 25 cents per 100 pounds. From Detroit to same places 20 cents per 100 pounds. Discrimination against Buffalo of total freight from Detroit to Buffalo of 10 cents per 100 pounds and 59 in the rate, making 15 cents in all.

4. During early winter of 1875 rates were 30 cents per 100 pounds from Indianapolis to Portland, Maine, and to Portland points, (that is, places around Portland which are rated same as Portland.) Rates from Buffalo to Portland and Portland points were 30 cents per 100 pounds, making a discrimination against Buffalo of total rate from Indianapolis to Buffalo of 20 cents per 100 pounds.

5. Some years since a large trade was transacted by Buffalo merchants with dealers in Eastern States, as well as in Eastern New York and Southern and Eastern Pennsylvania. Through discrimination in railroad freights the trade has been diverted to western points of distribution, virtually making Buffalo a way station. Dealers at all these places say that they "can do better west."

6. Grain has been shipped from Chicago to New York during 1875, at times, for 25 cents per 100 pounds; rate from Chicago to Buffalo, 20 cents, and 13 cents from Buffalo to New York; total, 33 cents per 100 pounds; a discrimination of 8 cents per 100 pounds, against Buffalo. These examples might be continued.

7. Since the opening of the Buffalo, New York, and Philadelphia Railroad, two years since, the discrimination against Buffalo in many sections has been less than in former years, because previously the only competition was between the canals and railroads in the late spring, summer, and fall. In winter and early spring the New York Central

and E ie Railroads had everything their own way when not in competition with each other.

8. A miller at Medina, N. Y., can buy No. 1 wheat at Milwaukee, say, for $1.30 per bushel, laid down at his mill at Medina. He comes to Buffalo and finds the dealer there cannot sell him the same quality of wheat at less than $1.30 after paying charges of freighting from Milwaukee to that port. The freight charges from Buffalo to Medina are about 4 cents per bushel, the rate of discrimination against the former place.

9. A miller in Binghamton, N. Y., was in the habit of coming to Buffalo and buying from 45,000 to 50,000 bushels of corn annually during several winters. He does not come to Buffalo now, for he finds that by purchasing at Lafayette, Ind., he saves from 3 to 4 cents per bushel, the railroads discriminating against Buffalo to that amount in freight.

10. The discrimination against Buffalo occurs generally at points where trunk lines come into competition at purchasing-points west.

11. A merchant came here last fall to buy cheese made in this section of New York. He found that he could make more money by going to New York and purchasing the same brand of cheese there. The reason was that he could obtain lower rates of freight from New York to Milwaukee than he could from the point of manufacture to Buffalo and thence to Milwaukee.

12. Parties can buy grain at way stations on western railroad lines and ship to points in New York and Pennsylvania, &c., at less cost than by coming to Buffalo. This discriminates against this port, for the rates from here to these same places are from 2 to 3 cents per 100 pounds higher relatively.

13. Coal has been and is now being shipped from Syracuse, N. Y., to western points, say Chicago, for instance, as cheaply as from Buffalo to said points; discrimination against this port of the rate of freight on coal from Syracuse to Buffalo.

Question 4. The shipment of grain by railroad east from Buffalo from the elevator connecting with the New York Central and Erie Railroads, from 1870 to 1876, inclusive.

Answer.—

Year.	Wheat.	Corn.	Oats.	Barley.	Rye.	Total.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1870	*	*	*	*	*	*
1871	2, 636, 170	4, 320, 591	1, 658, 718	416, 001	12, 750	9, 045, 140
1872	2, 440, 550	3, 032, 160	1, 227, 247	396, 082	4, 825	7, 100, 865
1873	4, 421, 854	4, 033, 152	1, 336, 633	312, 526	80, 440	10, 184, 605
1874	4, 658, 080	5, 209, 302	1, 318, 097	191, 277	10, 318	11, 386, 974
1875	6, 198, 393	6, 433, 717	2, 091, 327	60, 437	16, 786	14, 800, 660
1876	5, 984, 722	6, 581, 929	715, 049	112, 741	278, 291	13, 672, 732

* No figures kept.

The shipments of grain east from Buffalo by the Erie Canal from 1870 *to* 1876, *inclusive.*

Year.	Flour.	Wheat.	Corn.	Oats.	Barley.	Rye.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1870	76, 471	16, 738, 613	5, 911, 668	5, 572, 254	831, 024	378, 322
1871	47, 731	19, 028, 316	20, 695, 305	6, 649, 439	825, 420	986, 517
1872	5, 172	11, 001, 069	30, 934, 606	4, 598, 237	1, 729, 772	210, 705
1873	13, 616	24, 569, 088	21, 768, 053	3, 225, 926	358, 764	801, 481
1874	49, 182	21, 672, 048	16, 418, 841	2, 754, 945	133, 000	8, 000
1875	54, 251	23, 177, 151	9, 750, 109	2, 288, 037	58, 153	80, 070
1876	2, 137	12, 577, 243	12, 720, 138	1, 655, 530	263, 965	435, 901

Including flour reduced to wheat-bushel:

	Bushels.
Total, 1870	29, 813, 236
Total, 1871	48, 423, 652
Total, 1872	48, 500, 249
Total, 1873	50, 591, 392
Total, 1874	41, 232, 744
Total, 1875	35, 624, 866
Total, 1876	27, 663, 461

In addition, malt was shipped as follows:

	Bushels.
In 1870	160, 610
In 1871	205, 313
In 1872	261, 036

	Bushels.
In 1873	130,764
In 1874	104,754
In 1875	153,853
In 1876	215,238

Question 5. Please to state the receipts of grain of all kinds at Buffalo, from 1870 to 1876, according to the inclosed forms.

Answer:

Total receipts of grain at Buffalo by lake.

Year.	Aggregate receipts of flour.	Aggregate receipts of grain.
	Pounds.	*Bushels.*
1870	1,470,391	39,394,119
1871	1,278,077	60,813,730
1872	762,502	58,447,882
1873	1,259,205	67,340,570
1874	1,404,008	56,976,158
1875	1,017,666	51,697,993
1876	802,410	43,923,225

Of the above there were received by railroad steamer lines—

Year.	Flour.	Grain.	Remarks.
	Pounds.	*Bushels.*	
1870	1,425,845	8,902,395	The difference between these figures and those given above comprise the receipts by sailing-vessels, steam-barges, and their consorts.
1871	1,186,559	12,213,499	
1872	685,639	12,484,198	
1873	1,245,865	15,105,580	
1874	1,302,424	13,321,835	
1875	1,005,341	14,409,536	

Question 6. Is canal-grain generally shipped east from Buffalo as graded at Chicago and Milwaukee?

Answer. Yes.

Question 7. About what proportion of the average receipts of lake-vessels for the round trip are from east-bound freights, and what proportion from west-bound?

Answer. This depends entirely upon the rates of freight prevailing. The average in 1875 was about equal. As freight-rates advance the earnings eastward are proportionately increased, while westward freights on coal do not vary materially the whole season. Sailors' wages are always higher from Chicago eastward than from Buffalo westward. Towing-rates as a rule are twice as high at Chicago as at Buffalo.

Illustration.—A vessel carrying 30,000 bushels of grain at 3 cents per bushel net from Chicago to Buffalo would receive $900; return-cargo of same vessel, 900 tons of coal, at $1 per ton, $900.

Illustration.—A vessel carrying 30,000 bushels of grain at 4 cents per bushel from Chicago to Buffalo would receive $1,200

Deduct charges—towing, Chicago	$45	
Deduct charges—elevating, &c., Buffalo	180	
Average shortage	25	
		250
Net freight down		950
Up-freight on coal, at $1 per ton, free in and out of vessel, 900 tons		900
Excess of receipts eastward		50

If shipper received only 75 cents per ton, then the eastward freight would be increased $225, and average changed in proportion.

Illustration.—Suppose a 10-cent freight on grain eastward on 30,000 bushels	$3,000
Deduct as above	250
Net freight down	2,750
Suppose coal freight at $1 per ton, on 900 tons	900
Excess of receipts eastward	1,850

Question 8. A statement showing the percentage of total grain receipts at Buffalo which were actually bought and sold there during the year 1875.

Answer. No means of ascertaining. If the sales reported in newspapers were taken as a basis, that would be no criterion, for the reason that many sales are not reported at all; again, in exciting and active times many vessels' cargoes are sold over and over again.

It may be stated as a fact, that in 1875 probably but one cargo of grain out of twenty was sold here; the receipts being principally through shipments.

Sales at this port have been gradually declining in volume in consequence of the increase in "option trading" at Milwaukee and Chicago, this mode of speculation being considered less risky and requiring but little capital. The system of "cornering" the market at the before-named ports has destroyed the confidence of moneyed men, and they have nearly all withdrawn from the business.

Eight to ten years ago Buffalo was a large grain-purchasing point, and three-fourths at least of the grain changed hands here.

Question 9. Has coal ever been transported from Buffalo to Chicago by rail, and if so, at what rates and during what seasons?

Answer. Very rarely direct from Buffalo. Coal is constantly passing through Buffalo destined for Chicago, but the contract for the shipment is at a price direct from the mines to the western point. The nominal rate for coal per ton from Buffalo to Chicago in 1875, in car lots of from ten to twelve tons, was $3.80 to $4.20.

One dealer quoted the rate at $50 per car of eleven tons; and said, "As a general rule there were no direct shipments from Buffalo." He thought "The shipment of 1874 by rail was in consequence of a short supply at Chicago, and probably the price of the freight was made at Chicago." Further, "That shipments from the mines to the West via Buffalo were of frequent occurrence, but the rate of freight was made at the point of shipment."

(NOTE.—Coal is now shipped, and has been for the past year, if not for a longer period, from Syracuse, N. Y., to western points as cheap as from Buffalo.)

Present rate for coal from Buffalo to Chicago, via Grand Trunk Railroad of Canada and Michigan Central Railroad, $3 per ton gross.

Question 10. Please to present a statement showing the growth of the grain receipts by railroad steamer lines.

Answer:

Year.	Flour.	Grain.
	Pounds.	*Bushels.*
1870	1,425,845	8,902,395
1871	1,186,559	12,213,499
1872	685,639	12,484,198
1873	1 245,865	15,105,580
1874	1,302,424	13,321,835
1875	1,005,341	14,409,536

The grain carried by the propellers of the Anchor Line was left at Erie, Pa., and a portion of the flour.

The statement above comprises the receipts at Buffalo by the Western Transportation Company's boats in connection with the New York Central Railroad; the Ward Lake Superior Line, for 1874 and 1875, in connection with the New York Central Railroad; and the Union Steamboat Company, in connection with the Erie Railroad; also the receipts of flour only by the Anchor Line, partly for local trade and partly for any line, as per order of consignee, (the latter figures not separated in the account rendered by Anchor Line officials.)

Question 11. Please to present a statement showing fast-freight lines operating over the New York Central Railroad and over the Erie Railroad, and the other roads over which these lines operate.

Answer:

Over New York Central Railroad.

1. Red Line.
2. White Line.
3. Blue Line.
4. Hoosac Tunnel Line.
5. International Line.
6. Canada Southern Line.
7. Merchant Dispatch Transportation Line.
8. Milwaukee Line.

Over Erie Railroad,

9. Erie Dispatch.
10. South Shore Line.
11. Great Western Dispatch.
12. Commercial Express Line.
13. Diamond Line.
14. Erie and North Shore Line.
14. Waverly Line.

1. *Route of the Red Line.*—Boston and Albany Railroad; Providence and Worcester Railroad; Housatonic Railroad; Worcester and Nashua Railroad; New York Central and Hudson River Railroad; Lake Shore and Michigan Southern Railroad; Toledo, Wabash and Western Railroad; Toledo, Peoria and Warsaw Railroad; Logansport, Crawfordsville and Southwestern Railroad; Detroit, Eel River and Illinois Railroad; Cincinnati, Lafayette and Chicago Railroad; Chicago, Rock Island and Pacific Railroad; Chicago and Northwestern Railroad, and connecting with the Union Central and Kansas Pacific Railroad.

2. *Route of the White Line.*—Boston and Albany Railroad; Providence and Worcester Railroad; Housatonic Railroad; Worcester and Nashua Railroad; New York Central and Hudson River Railroad; Lake Shore and Michigan Southern Railroad; Cleveland, Columbus, Cincinnati and Indianapolis Railroad; Terre Haute and Indianapolis Railroad; Evansville and Crawfordsville Railroad; Indianapolis and Saint Louis Railroad; Indianapolis, Bloomington and Western Railroad; Springfield and Illinois Southeastern Railroad; Louisville and Nashville and L. M. Railroad; Paris and Decatur Railroad; Cairo and Vincennes Railroad.

3. *Route of the Blue Line.*—Worcester and Nashua Railroad; Boston and Albany Railroad; Providence and Worcester Railroad; Eastern Railroad; Housatonic Railroad; New York, Oswego and Midland Railroad; New York Central and Hudson River Railroad; Great Western Railroad; Michigan Central Railroad; Fort Wayne, Jackson and Saginaw Railroad; Detroit, Lansing and Lake Michigan Railroad; Chicago and Lake Huron Railroad; Chicago and Alton Railroad; Chicago and Michigan Lake Shore Railroad; Chicago, Burlington and Quincy Railroad; Detroit, Eel River and Illinois Railroad; Indianapolis, Peru and Chicago Railroad; Illinois Central Railroad; Toledo, Peoria and Warsaw Railroad; Chicago and Northwestern Railroad; West Wisconsin Railroad.

4. *Route of the Hoosac Tunnel Line.*—Eastern and Maine Central Railroad; Boston and Maine Railroad; Boston, Clinton and Fitchburg Railroad; Fitchburg Railroad; Providence and Worcester Railroad; Boston, Barre and Gardner Railroad; Troy and Greenfield Railroad; Troy and Boston Railroad; New York Central and Hudson River Railroad; Great Western Railroad; Michigan Central Railroad; Lake Shore and Michigan Southern Railroad; Cleveland, Columbus, Cincinnati and Indianapolis Railroad; Jeffersonville, Madison and Indianapolis Railroad; Indianapolis and Saint Louis Railroad; Saint Louis, Alton and Terre Haute Railroad, and their connections.

5. *Route of the International Line.*—Michigan Central Railroad; Grand Trunk Railroad; New York Central and Hudson River Railroads; Boston and Albany Railroad; Boston and Maine Railroad; Providence and Worcester Railroad; Worcester and Nashua Railroad; Housatonic Railroad, and their connections; Chicago and Northwestern Railroad; Chicago, Milwaukee and Saint Paul Railroad; Chicago, Burlington and Quincy Railroad; Illinois Central Railroad; and Chicago and Alton Railroad, and their connections.

6. *Route of the Canada Southern Line.*—Boston and Maine Railroad; Boston and Albany Railroad; New York Central and Hudson River Railroad; Canada Southern Railroad; Toledo, Wabash and Western Railroad; Michigan Central Railroad; Cincinnati, Hamilton and Dayton Railroad; Dayton and Michigan Railroad; Indianapolis, Peru and Chicago Railroad; Jeffersonville, Madison and Indianapolis Railroad; Evansville, Terre Haute and Chicago Railroad; Evansville and Crawfordsville Railroad; Cincinnati, Lafayette and Chicago Railroad; Flint and Pere Marquette Railroad, and their connections.

7. *Route of the Merchant Dispatch Transportation Line*, (private line.)—Canada Southern Railroad; Great Western Railroad of Canada; Grand Trunk Railroad; New York Central and Hudson River Railroad; Lake Shore and Michigan Southern Railroad; Buffalo, New York and Philadelphia Railroad; all the routes of the Red, White, and Blue, lines; and, in fact, every line in the United States and Canada, excepting the New York and Erie Railroad, Atlantic and Great Western Railroad, Philadelphia and Erie Railroad, and Baltimore and Ohio Railroad.

8. *Milwaukee Line.*—Boston and Albany Railroad; New York Central and Hudson River Railroads; Great Western Railroad of Canada; Detroit and Milwaukee Railroad.

9. *Route of the Erie Dispatch.*—This title simply indicates the Erie Railroad Company's fast-freight line to and from New York and Buffalo over said railroads.

10. *South Shore Line.*—To and from New York, over Erie Railroad and over Lake Shore and Michigan Southern Railroad, to all points west.

11. *Great Western Dispatch.*—Same as the preceding, No. 10.

12. *Commercial Express Line.*—Grand Trunk Railroad of Canada; Michigan Central Railroad; Detroit and Milwaukee Railroad, and New York and Erie Railroad.

13. *Route of the Diamond Line.*—Canada Southern Railroad; Michigan Central Railroad; Chicago and Northwestern Railroad; Chicago, Milwaukee and Saint Paul Railroad; Illinois Central Railroad; Chicago, Rock Island and Pacific Railroad; Chicago, Burlington and Quincy Railroad; Dayton and Michigan Railroad; Cincinnati, Hamilton and Dayton Railroad; Toledo, Wabash and Western Railroad; Missouri, Kansas and Texas Railroad; Saint Louis, Iron Mountain and Southern Railroad; Indianapolis, Peru and Chicago Railroad; Jeffersonville, Madison and Indianapolis Railroad; Louisville and Nashville and Great Southern Railroad; Cincinnati, Lafayette and Chicago Railroad; Evansville, Terre Haute and Chicago Railroad, and their connections; the Albany and Susquehanna Railroad; Rensselaer and Saratoga; Troy and Boston Railroad, (through Hoosac Tunnel;) Lehigh Valley Railroad; Philadelphia and Reading Railroad; Northern Pennsylvania Railroad; and New York and Erie.

14. *Erie and North Shore.*—Great Western Railroad of Canada; Detroit and Milwaukee Railroad; Chicago, Burlington and Quincy Railroad; Michigan Central Railroad; Chicago and Northwestern Railroad; West Wisconsin Railroad; Lehigh Valley Railroad; Philadelphia and Reading Railroad, Northern Pennsylvania Railroad; Illinois Central Railroad; and New York and Erie Railroad.

15. *Route of the Waverly Line.*—From Philadelphia, via Lehigh Valley Railroad, to Waverly; thence by Erie Railroad to Buffalo, and from Buffalo west via any and all lines.

Memorandum A.—The eastward-bound freight-lines operating over the Lake Shore and Michigan Southern Railroad are the Red Line, Blue Line, Hoosac Tunnel Line, South Shore Line, Great Western Dispatch, and Empire Line.

Memorandum B.—The Empire Freight Line is an important organization. Its routes are as follows:

1. From New York over Central Railroad of New Jersey to Easton, Pa.; thence over Lehigh Valley Railroad to Quakake; thence over Philadelphia and Reading Railroad to Milton; thence over Philadelphia and Erie Railroad to Emporium; thence over Buffalo, New York and Philadelphia Railroad to Buffalo.

2. From Philadelphia over Pennsylvania Railroad to Harrisburgh; thence over Northern Central Railroad to Sunbury; thence over Philadelphia and Erie Railroad to Emporium; thence over Buffalo, New York and Philadelphia Railroad to Buffalo.

3. From Baltimore over Northern Central Railroad, and as preceding statement, to Buffalo.

4. From New York to the West: Over Central Railroad of New Jersey to Easton, Pa.; thence over Philadelphia and Reading Railroad to Milton; thence over Philadelphia and Erie Railroad to Erie, Pa.; thence over Lake Shore and Michigan Southern Railroad to Cleveland; thence over Cleveland, Columbus, Cincinnati and Indianapolis Railroad to Indianapolis; thence over Indianapolis and Saint Louis Railroad to Saint Louis, Mo. From Indianapolis over Indianapolis, Bloomington and Western Railroad to Peoria, Ill. From Cleveland over Lake Shore and Michigan Southern Railroad to Toledo, Detroit, and Chicago. From Toledo over Toledo, Wabash and Western Railroad to Lafayette, Ind.; also, over Chicago, Burlington, and Quincy Railroad to Hannibal and Burlington; over Burlington and Missouri River Railroad to Omaha. From Detroit over Detroit and Milwaukee Railroad and Flint and Pere Marquette Railroad to Bay City, Mich.; over the Michigan, Lake Shore and Chicago Railroad to Grand Rapids, Mich.

From Irvineton, Pa., over Oil City and Alleghany River Railroad to Oil City and Corry, Pa.

From Philadelphia over Pennsylvania Railroad to Harrisburgh; thence over Northern Central Railroad and Philadelphia and Erie Railroad to Milton; thence to Emporium and Buffalo. (See 1 and 2.)

From Baltimore over Northern Central Railroad to Sunbury; thence over Philadelphia and Erie Railroad to Milton; thence to Emporium and Buffalo. (See 1 and 2.)

From Richmond, Va., over Richmond, Fredericksburgh and Potomac Railroad to Fredericksburgh; thence over Alexandria and Fredericksburgh Railroad to Alexandria; thence over Baltimore and Potomac Railroad to Baltimore; thence over Northern Central Railroad, and (as above) to Buffalo.

APPENDIX No. 13.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF SAINT LOUIS, AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY BY RIVER AND BY RAIL, BY MR. GEORGE H. MORGAN, SECRETARY OF THE MERCHANTS' EXCHANGE OF SAINT LOUIS, MO. 1876.

Question 1. Please to present a statement, in such form as may be practicable, showing the growth of the trade of Saint Louis with Northern Missouri and with States and sections of States north of Saint Louis.

Answer. It is very difficult to answer this question correctly. The trade of Saint Louis with the North and Northwest is represented by receipts and shipments by the Saint Louis, Kansas City and Northern Railroad, by the Rockford, Rock Island and Saint Louis Railroad, and by the Upper Mississippi and Missouri River boats. There is also a considerable amount of tonnage from Kansas, Northern Missouri, or rather Northwestern Missouri, and Nebraska that reaches Saint Louis by the Missouri Pacific Railroad, which it is impossible to distinguish or separate from other receipts by that road coming from Middle and Western Missouri and Southern Kansas. I have, therefore, not included receipts and shipments by that road in the estimate of northern tonnage. As no reports of tonnage were compiled previous to 1871, I can only make a comparison between that year and 1875.

The tonnage of the four routes first named compare as follows:

Tons of freight received at Saint Louis from the north in 1875	555,343
Tons of freight received at Saint Louis from the north in 1871	502,639

An increase of 52,704 tons, or, say, 10 per cent.

Tons of freight shipped from Saint Louis to the north in 1875	264,525
Tons of freight shipped from Saint Louis to the north in 1871	245,572

An increase of 18,953 tons, or, say, 7¼ per cent.

Question 2. Please to present a statement showing the growth of the commerce of Saint Louis with Southern Missouri and with States and sections of States lying south of Saint Louis.

Answer. Taking the tonnage of roads leading southward and of the Lower Mississippi River, the comparison is as follows:

Tons of freight received at Saint Louis from the south in 1875	1,512,960
Tons of freight received at Saint Louis from the south in 1871	1,150,400

An increase of 352,560 tons, or, say, 30 per cent.

In compiling the receipts from the south, I have deducted receipts of coal, which, although received by southern roads, cannot properly be called receipts from the south, coming as it does from Central and Southern Illinois.

Tons of freight shipped from Saint Louis to the south in 1875	935,600
Tons of freight shipped from Saint Louis to the south in 1871	734,240

An increase of 201,360 tons, or, say, 27½ per cent.

Question 3. Please to present a statement, in such form as may be practicable, showing the growth of the tonnage transported on roads running eastward from Saint Louis during the last fifteen years.

Answer. The answer to this will be found included in the answer to question No. 35.

Question 4. What proportion of the total shipments of cotton through Saint Louis, as reported by the Saint Louis Cotton Exchange, and also by the New York Commercial and Financial Chronicle, for the year ended August 31, 1875, was actually marketed at Saint Louis; and what proportion was merely shipped through Saint Louis, on direct consignment from interior points at the South, to Atlantic seaports, or interior points in the Eastern States?

Answer. Of the 133,969 bales of cotton received at Saint Louis for the cotton year ending August 31, 1875, 94,290 bales were marketed in Saint Louis, and 39,679 bales were shipped through on consignment, from interior points in the South to the Atlantic seaboard. The total shipment eastward to tide-water and to eastern mills was 127,127 bales, of which 18,224 bales was shipped from Saint Louis on through-bills of lading to Liverpool, London, and Bremen direct.

Question 5. Please to state what railroads named on pages 44 and 45 of your report for the year 1874, and the corresponding tables for the year 1875, should be considered as roads running north, as roads running south, as roads running east, and as roads running west from Saint Louis.

Answer—

Eastern roads.

Ohio and Mississippi Railroad.
Chicago, Alton, and Saint Louis Railroad.
Indianapolis and Saint Louis Railroad.
Saint Louis, Vandalia, Terre Haute and Indianapolis Railroad.
Toledo, Wabash and Western Railroad.

Western roads.

Atlantic and Pacific and Missouri Pacific Railroad.
Saint Louis, Kansas City, and Northern Railroad.

Southern roads.

Saint Louis, Iron Mountain and Southern Railroad.
Belleville and Southern Illinois Railroad.
Saint Louis and Southeastern Railroad.
Missouri, Kansas and Texas Railroad.
Illinois and Saint Louis Railroad.
Cairo and Saint Louis Railroad.

Northern roads.

Rockford, Rock Island and Saint Louis Railroad.

The Saint Louis, Kansas City, and Northern Railroad has a branch running north, connecting with the Central Railroad of Iowa. Of the tonnage received at Saint Louis by that road in 1875, amounting to 266,091 tons, 30,000 tons was from the north branch and the balance from the west branch.

Question 6. Please to state such facts as will best serve to illustrate the changes which have taken place in the passenger business between Saint Louis and States south of the mouth of the Ohio River during the last ten years.

Answer. The passenger travel between Saint Louis and the South has been nearly all diverted from the river to the rail. The great bulk of first-class travel now goes by rail, it being more expeditious and more certain. The boats still retain a considerable, perhaps half, of the second-class travel, the fare from Saint Louis to New Orleans, "deck," or second-class, being but $5, against $12.50 by rail. The change in the passenger traffic is illustrated by the fact that, with the exception of one local packet-line, boats are not run at any certain times or days, but wait for cargoes, and also from the fact that the boats constructed in late years are particularly designed for freight, and no especial attention is given to accommodations for passengers, while in earlier times cabin conveniences and accommodations were especially provided.

Question 7. Please to state or refer to any facts which you may deem of value as to the advantages which have been realized by the use of Illinois coal in the reduction of the iron ores of Missouri.

Answer. It is well known that the State of Missouri is one of the richest in minerals of any State in the Union. The State contains many rich deposits of iron-ore, the most prominent of which is the celebrated Iron Mountain, about one hundred miles south of Saint Louis, on the line of the Saint Louis, Iron Mountain, and Southern Railroad. This immense deposit of ore has been worked for many years, and the product sent to other points, principally in Pennsylvania, where it was made into iron, and much of the product shipped back in the shape of pig and rolled iron, thus paying the cost of transportation both ways. In 1868 an experiment was made in an old furnace at Carondelet, (now South Saint Louis,) in bringing together Missouri ore and Illinois coal. The experiment proved satisfactory, and led to the building of another furnace with improved machinery, which was an entire success, and proving profitable, other establishments were organized. In 1875 there were four blast-furnaces, an iron-rail mill, and a steel-rail mill in operation, as follows:

Vulcan Iron Company, 3 furnaces, with a total capacity of 50,000 tons pig-iron per year; Jupiter Iron Company, 1 furnace, the largest in the United States, with a capacity of 30,000 tons per year; South Saint Louis Company, 2 furnaces, with a total capacity of 30,000 tons per year; the Missouri Furnace Company, 2 furnaces, with a total capacity of 30,000 tons per year.

A total of 4 establishments with 8 blasts, with a capital of $3,150,000, and capable

of producing annually 140,000 tons of pig-iron. In connection with their blast-furnaces, the Vulcan Company have an iron-rail mill with a capacity of 30,000 tons of rails per year, and a steel-rail mill with a capacity of 40,000 tons steel rails per year; the only rail-mills west of the Mississippi River.

Another result is the establishment of zinc furnaces, of which there were in operation in 1875, 3, with a capacity of, in all, 16 tons of zinc per day. In smelting the zinc-ore the slack or refuse coal, such as is rejected by the blast-furnaces, is used, and thus all the coal is utilized. The establishment of these zinc-works was a direct result of the first experiment of smelting the iron-ore. It is known that large quantities of railroad iron for southern and western roads has in past years been imported via New Orleans. The Vulcan Company is now filling an order for 20,000 tons rails for Texas, which is being shipped by the barge-line via New Orleans, thus showing one of the results of smelting Missouri iron with Illinois coal. As a natural adjunct to the furnaces which produce the raw material, there have been a large number of manufactories established for making the various classes of iron goods needed in the West. In 1875 the capital employed in furnaces, rolling-mills, founderies, and machine-shops, was $6,039,600, and the value of the production $6,132,310, while in 1870, the capital employed was $3,198,400, and the value of the production $4,840,240. Taking the value of the product in 1875 at the prices ruling in 1870, and the increase in value would be much greater.

The coal used is what is known as "Big Muddy coal," a superior kind of bituminous coal found in Jackson County, Illinois, about one hundred miles south of Saint Louis. This is mixed with coke in the proportion of 1½ tons of coal to 1 ton of coke. The advantages derived from the use of mineral coal in place of charcoal is, that with the mineral coal a larger blast, or, as it is called, bosh, can be made at same expense. The iron made by mineral coal is also preferable for manufacturing into steel.

Question 8. What proportion of the total tonnage shipped east from Saint Louis during the last year do you estimate to have consisted of flour, grain, provisions, and live animals, respectively?

Answer. The total tonnage shipped eastward from Saint Louis in 1875 was 746,013 tons; of this the amount of the articles named was: 110,712 tons of flour, or 14.84 per cent.; 69,649 tons of grain, or 9.33 per cent.; 11,867 tons of provisions, or 1.59 per cent.; 120,542 tons of live-stock, or 16.16 per cent.

Question 9. What proportion of the total tonnage shipped south from Saint Louis during the last year do you estimate to have consisted of flour, grain, provisions, and live animals, respectively?

Answer. Total tonnage shipped south from Saint Louis in 1875 was 759,552 tons; of this the amount of the articles named was: 158,475 tons of flour, or 20.86 per cent.; 120,855 tons of grain, or 15.91 per cent.; 67,582 tons of provisions, or 8.83 per cent.; 3,131 tons of live-stock, or 0.41 per cent.

Question 10. Please to present any facts at your command going to illustrate the manner and extent in which freight-rates to and from Saint Louis are regulated or controlled by competitive water-routes, referring to railroads running in competition with the rivers north, south, east, and west from Saint Louis.

Answer. Freight-rates between points having both water and rail communication are governed by the rates fixed by the boats. This will be seen by the following rates now existing:

	Miles.	Cts. per 100 pounds.
Rate from Saint Louis to Keokuk, Iowa, by boat or rail.....	192	12½
Rate to Bushnell, Illinois, on same Railroad	154	23
Rates from Rock Island to Saint Louis, boat or rail	243	15
Rates from Edwardsville to Saint Louis on same road.....	213	20
Rates from Saint Louis to Memphis by rail, river competition.	349	25
Rates from Saint Louis to Humboldt, same road, no water competition.	266	33
Rates from Saint Louis to New Orleans by rail.....	725	45
Rates to Jackson, Mississippi, no water competition	542	56

Question 11. Please state briefly the facts as to the time when express goods and the lighter and more valuable freights began to be shipped from Saint Louis to the Gulf States on railroads; and please also make an estimate of the proportion of such goods which are now transported by rail and the proportion transported by river.

Answer. In early days, when the West depended entirely upon the great rivers for

communication with the States of the South, of course all freights, heavy and light, as well as express goods and the mails, were transported by river. This continued up to nearly the commencement of the late war. After the war was over and rail communication was opened, (say about 1866,) express and the lighter goods were turned to the rail, as being more expeditious. I should place the time when this class of goods began to be diverted to railroads at the year 1866, and as fast as rail communication was opened up the change was made, and now all goods of this class are carried by rail.

Question 12. About what proportion of the total tonnage shipped from Saint Louis to New Orleans by river during the last year was transported in barges, and what proportion in steamboats?

Answer. The exact figures are as follows:

Shipments from Saint Louis to New Orleans by river in 1875:

	Tons.
By steamboats	106,190
By barges	93,470
Total shipments by river	199,660

There is a small amount shipped to New Orleans by rail, but it is insignificant. I have no means of ascertaining it.

Question 13. What classes of merchandise are now shipped from New Orleans to Saint Louis chiefly by rail, and what classes of merchandise are now shipped from Saint Louis to New Orleans chiefly by rail?

Answer. Shipments from New Orleans to Saint Louis by rail consist of tropical fruits, sugar, molasses, coffee, rice, and fancy groceries, (imported.) These same articles are also brought by water, and there is no class of goods except *perishable, like tropical fruits, that can be said to come exclusively by rail.* The great bulk of the heavy goods named come by water, and in order to secure any of such freights the rates by rail are made to correspond with water-rates, insurance and drayage added.

The shipments from Saint Louis to New Orleans by rail are inconsiderable, and consist chiefly of live-stock and meats requiring quick transit.

Question 14. Of the total grain shipped south from Saint Louis during the last year, what proportion went to New Orleans and what proportion to other points at the South?

Answer. In answer I will state that very little grain is shipped to New Orleans by rail, the railroad not being able to compete with the river in freights. Therefore, the great bulk of the shipments of grain to the South by rail is for interior points. Assuming, then, that none of the grain shipped south by rail goes to New Orleans, (the amount, if any, being too small to change the figures materially,) I answer: Total bushels of grain shipped south in 1875, 5,541,017; to New Orleans, 2,251,892 bushels, or 40.64 per cent.; to other southern points, 3,289,125 bushels, or 59.36 per cent.

Question 15. Such facts as you can conveniently present, showing the growth of business between Saint Louis and Arkansas, the Indian Territory and Texas, over the Missouri, Kansas and Texas Railroad, and the Iron Mountain Railroad.

Answer. Previous to the opening of the Cairo and Fulton branch of the Iron Mountain Railroad, running through the State of Arkansas, and the opening of the Missouri, Kansas and Texas Railroad, Saint Louis had very little trade with Arkansas and Texas, and none comparatively with the Indian Territory. What was done was on the Arkansas and White Rivers. There is now a large trade between Saint Louis and the States named, which is well illustrated by the fact that in 1875, 101,268 bales of cotton were received by the Iron Mountain Road, all of which came from Arkansas and Texas, and 16,269 bales by the Missouri, Kansas and Texas Road. There were also received by the two roads named, 872,100 bushels wheat; 105,830 head cattle; 14,896 head sheep; 24,847 head hogs; 1,959 head horses and mules.

The receipts by the same roads in 1872 were: 12,120 bales cotton, 66,037 head cattle, 13,743 head sheep, and no wheat or other grain.

It is an established fact that the trade of a country follows the product of the soil, and consequently Saint Louis now enjoys a large reciprocal trade with these States. It is impossible to state in dollars the extent of this trade, but it forms a large item in the commerce of our city, especially in dry goods, clothing, boots, and shoes, saddlery, and agricultural implements.

Question 16. Please to present a statement giving a description of the two roads first mentioned in so far as to show their connections, and as nearly as possible the territorial limits of their commercial control.

Answer. The Saint Louis, Iron Mountain and Southern Railway, with its northern terminus at Saint Louis, runs southwardly through the southeastern part of the State of Missouri and in a southwestwardly direction through the State of Arkansas into Texas. At Bismarck, in the State of Missouri, seventy-five miles south of Saint Louis, a branch runs to Belmont, on the Mississippi River, opposite Columbus, Ky., where, by a car-transfer ferry-boat, direct connection is made, without change of cars, with the Mobile and Ohio Railroad and its connections, reaching to every point in the South

and Southeast east of the Mississippi River. The main line from Bismarck runs to the State line in Butler County, and, crossing into Arkansas, follows a line running diagonally across the State from the northeast to the southwestern corner, crossing into Texas, and connecting at Texarkana with the whole system of Texas roads, reaching to Sherman on the extreme northern boundary, to Galveston on the south, and to Shreveport on the east. The road crosses the Arkansas River at Little Rock and the Red River at Fulton, Ark. The territory tributary to this road on the west of the Mississippi is Southeast Missouri, the Northern, Central, and Southern portion of Arkansas, as represented by a line drawn from the northeast to the southwest corner, and all of Texas that is accessible by rail. The opening of this line has created a revolution in the commerce of Texas and Arkansas. Formerly the trade naturally gravitated to New Orleans and Galveston by the southern rivers and the railroads reaching from Galveston to the interior, carrying the cotton and other products to those cities for a market, and bringing back in exchange the merchandise needed. Now, by direct and quick rail communication with Saint Louis and the north, the bulk of the trade of that country is turned northward, and Saint Louis reaps her full share of it.

The Missouri, Kansas and Texas Railroad has its northern terminus proper at Hannibal, Mo., and runs southwardly, crossing the Saint Louis, Kansas City and Northern Railroad at Moberly, and the Missouri Pacific at Sedalia. From Sedalia, 189 miles west of Saint Louis, this road uses the track of the Missouri Pacific to Saint Louis, which may be considered another northern terminus. From Sedalia the road runs to Fort Scott and Parsons, in the extreme southeastern portion of Kansas. From Parsons there is a branch running northwestwardly to Junction City, on the Kansas Pacific Railroad. From Parsons the road runs southwardly through the Indian Territory to Dennison, Tex., connecting there with the Houston and Texas Central to Galveston, and with the east and west roads through the State. The territory tributary to the Missouri, Kansas and Texas Road is Central and Western Missouri, Southeastern Kansas, the Indian Territory, and such portions of Texas as are reached by its connections.

Question 17. In your opinion, what kind of freights will probably continue to be transported almost exclusively on the river?

Answer. I understand this question to mean, where there is both rail and water communication, what freights must continue to be transported almost exclusively by water. Railroads cannot compete with the Mississippi River in carrying bulky or heavy freights, such as flour, grain, provisions, hay, ore, tobacco, and iron. I am of opinion, therefore, that the class of articles named, and especially flour and grain, which cannot bear high freight, and which is now transported so cheaply by barges, must continue in the future, to a greater extent than in the past, to seek the water-route.

Question 18. For every 1,000 tons of freight shipped south from Saint Louis by the barge line, how many tons of freight are shipped north by the same line?

Answer. In 1875 there were shipped south, by the barge-line, 93,470 tons; in 1875 there were shipped north to Saint Louis, by the barge-line, 18,485 tons. In round numbers, for every 1,000 tons shipped south 200 tons is received in return.

Question 19. Similar data to the forgoing in regard to the steamboats.

Answer. In 1875 shipments south, by steamboats, were 106,190 tons; receipts from the south, by steamboats, were 36,310. In round numbers, for every 1,000 tons shipped south 300 tons is received in return.

Question 20. For every 100 car-loads shipped from Saint Louis to points east, how may car-loads are received at Saint Louis from the East; for every 100 car-loads from Saint Louis to points north, about how many car-loads are received at Saint Louis from the North; for every 100 car-loads from Saint Louis to points west, about how many car-loads are received at Saint Louis from the West; and for every 100 car-loads from Saint Louis, on the Iron Mountain, and the Missouri, Kansas and Texas Railroad, about how many car-loads are received at Saint Louis over these roads?

Answer. A careful calculation, based on the tonnage, gives the following result:

For every 100 car-loads of freight shipped east from Saint Louis 234 car-loads are received from the East; for every 100 car-loads of freight shipped north from Saint Louis, 250 car-loads are received from the North; for every 100 car-loads of freight shipped west from Saint Louis, 175 car-loads are received from the West; for every 100 car-loads of freight shipped from Saint Louis via the Iron Mountain and Missouri, Kansas and Texas Railroads, 200 car-loads are received in return.

It will be understood that in making the above calculations all local tonnage is included. Thus, while there are 234 cars received from the East against 100 cars shipped east, it is a fact that the tonnage shipped to extreme eastern points, say New York, Boston, Philadelphia, Baltimore, &c., exceeds the tonnage received from such points.

Question 21. Please to describe the competing rail-lines from Saint Louis to Boston, to New York, to Philadelphia, and to Baltimore.

Answer. Competing lines to Boston: Chicago, Alton, and Saint Louis Railroad to Chicago, thence by Michigan Central and Great Western of Canada, New York Cen-

tral, and Boston and Albany Railroads. Also from Chicago via Grand Trunk of Canada, via Portland to Boston. Indianapolis and Saint Louis Railroad to Terre Haute and Indianapolis, thence to Buffalo, and via New York Central and Boston and Albany. Toledo, Wabash, and Western Railroad to Toledo, thence via Lake Shore to Buffalo, and via New York Central and Boston and Albany. Vandalia line to New York, thence by sound steamers to Boston. Baltimore and Ohio to Baltimore, thence by water to Boston.

To New York: Chicago, Alton, and Saint Louis Railroad to Chicago, thence via Pittsburgh and Fort Wayne and Pennsylvania Central. Indianapolis and Saint Louis to Indianapolis, thence to Pittsburgh, and via Pennsylvania Central to New York. Vandalia line in connection with the Pan-Handle and Pennsylvania Central. Toledo, Wabash and Western Railroad in connection with New York Central and Hudson River Railroad. Ohio and Mississippi Railroad to Cincinnati, and thence by Great Western and Erie Railroad. Also via Baltimore by rail. Also by water to New York.

To Philadelphia: Chicago, Alton, and Saint Louis Indianapolis and Saint Louis, Vandalia line, all reaching Philadelphia by the Pennsylvania Central.

To Baltimore: Ohio and Mississippi to Cincinnati, connecting with the Baltimore and Ohio Railroad. Also by Vandalia, and Indianapolis and Saint Louis Railroad, reaching Baltimore over the Pennsylvania Central to Harrisburgh, Pa., thence by Northern Central to Baltimore.

Question 23. About what proportion of the tonnage shipped from Saint Louis to the Atlantic seaboard is shipped in fast-freight-line cars, and which of the roads do not employ fast-freight-line cars?

Answer. All the trunk roads to the Atlantic seaboard, without exception, have fast-freight lines running over their roads. From information received from the freight-agents, I find that nearly all, say $\frac{7}{8}$ to $\frac{9}{10}$, of all tonnage to the Atlantic seaboard is shipped in fast-freight-line cars.

Question 23. Please to state the year when direct railroad communication was formed between Saint Louis and New York and between Saint Louis and New Orleans, also the number of through lines at this time to the Atlantic seaboard and to ports on the gulf.

Answer. Direct rail communication was formed between Saint Louis and New York in 1857 by the opening of the Ohio and Mississippi Railroad to Cincinnati, connecting with the Little Miami Railroad, via Columbus to Wheeling, Va., and via Crestline to Pittsburgh, connecting at Pittsburgh with the Pennsylvania Central.

There are now five through-lines to the Atlantic seaboard.

Direct rail communication was formed with New Orleans in August, 1869, by the opening of the Saint Louis and Iron Mountain Railroad to Belmont, and crossing, by a ferry-car transfer, to Columbus, and from there by the Mobile and Ohio Railroad and connections to New Orleans.

There are three lines to the Gulf of Mexico. The Iron Mountain Road, by its connections with the Mobile and Ohio to Mobile and New Orleans, and by its Arkansas extension to Texarkana, and thence by Texas roads to Galveston, also by the Missouri, Kansas and Texas and connections to Galveston.

Question 24. Please to present one or two examples of prorating arrangements between rail and water transport, showing how many miles of river are assumed to be equivalent to one mile of rail.

Answer. The Memphis and Saint Louis Packet Company, in connection with the Vicksburgh and Meridian Railroad, from Vicksburgh, prorate as follows: river from Saint Louis to Vicksburgh, 850 miles, prorate on 173 miles; rail from Vicksburgh to Montgomery, Ala., 298 miles; total distance in miles by rail, 471 miles.

Proportion of freight on flour received by boat, 25 cents per barrel; by railroad, 43 cents per barrel; total freight on flour from Saint Louis to Montgomery, 68 cents per barrel, of which the boat receives 25 cents for 850 miles by river, and the railroad 43 cents for 298 miles by rail.

By Memphis Packet Company to Memphis, thence by rail to Little Rock, Ark.

To Memphis, 450 miles by water, 25 cents per barrel; transfer at Memphis 5 cents per barrel; from Memphis to Little Rock by rail, 135 miles, 25 cents per barrel; making 450 miles by river, equal to 135 miles by rail.

By Northern Line Packet Company and Milwaukee and Saint Paul Railroad from Saint Paul to Milwaukee, distance 375 miles, freight on flour, 40 cents per barrel; by boat from Saint Paul to La Crosse, 180 miles, $\frac{1}{4}$, or $13\frac{1}{2}$ cents per barrel; by rail from La Crosse to Milwaukee, 195 miles, $\frac{3}{4}$, or $26\frac{1}{4}$ cents per barrel.

By Northern Line Packet Company and Illinois Central Railroad from Saint Paul to Chicago, 521 miles, freight on flour, 50 cents per barrel; by boat from Saint Paul to Dunleith, 321 miles, $\frac{4}{10}$, or 20 cents per barrel; by rail from Dunleith to Chicago, 200 miles, $\frac{6}{10}$, or 30 cents per barrel.

Question 25. Please to state facts of interest as to the shipment of goods on direct consignment from Saint Louis to foreign countries, especially to Great Britain; also as to the direct consignment of goods from foreign countries to Saint Louis, referring

both to the movement of this character via New Orleans and via Atlantic sea-port; for example, estimated tonnage of such shipments via each sea-port, and approximately, at least the proportion of such shipments to the total shipments to New Orleans and to each of the great Atlantic sea-ports; the special advantages offered for such shipments at the various sea-ports as to time, charges, rebates, &c.; The prorating arrangements as to through rates between the rail and steamer lines of each route; the extent to which merchandise is purchased at Saint Louis on account of the railroad or ocean-steamer line transporting it; facts as to the growth of this sort of commerce; the purely commercial causes which have led to such direct shipments, and the advantages realized by Saint Louis from such commercial movements.

Answer. Shipments on direct bills of lading to foreign countries from Saint Louis during the year 1875 were as follows:

Via Baltimore:

	Tons.
To Liverpool	2,170
To Bremen	551
	2,721

Via New York:

	Tons.
To Liverpool	10,140
To Leipsic	½
To Havre	252
To Leeds	5½
To Vienna	1
To Sheffield	60
To Antwerp	319
To Glasgow	530
To London	449
To Bremen	64
To Hamburg	½
	11,821½

	Tons.
Via Philadelphia, to Liverpool	785
Via Boston to Liverpool	1,498
Via New Orleans to Liverpool	6,857

Import of foreign goods at Saint Louis on direct consignment during 1875:

	Tons.
Via New Orleans	27,629
Via Eastern ports	945

I cannot ascertain the facts as to the amount of shipments to each of the Atlantic seaports without a great expense of time and labor. As to the advantages offered by the various Atlantic ports, I find there is very little choice among shippers. All of the lines that do this foreign business take special care to handle it economically. As to the prorating arrangements I find there are none. The agents of the various lines at the seaport, telegraph their agents here the ocean freights, to which they add a rate from here to the seaport, and give a through rate. These rates vary according to the tonnage offering. I find that no merchandise is bought here for account of the railroads or ocean line transporting it, but is shipped direct on orders or on consignment.

This commerce has been established within the last four or five years and is growing every year. The agents tell me that the business, according to present indications, will be largely increased this year.

The causes that have led to the establishment of this trade I think to be, that the merchandise is bought cheaper nearer the point of production than at the seaports, and transportation on through bill of lading is cheaper than the local rate to New York with the expense of rehandling, &c., and the ocean freights from the seaports.

The advantage derived by Saint Louis is the opening of a direct trade with the consuming ports of the world, thereby extending her commerce and tending to increase direct importations by the same routes from foreign countries.

I think the following statement is as nearly correct as it is possible to give, showing the tonnage of imported merchandise entered at Saint Louis in 1875 under the "direct-importation laws," *i. e.*, without appraisement at outer ports. The one item of sugar is appraised at New Orleans.

The new law was passed July 14, 1870, but there were no transactions under it here until September, 1871, during which month we had but four entries, the cause be-

ing a failure of transportation companies to bond their lines, together with the presence of many ridiculous and (virtually) prohibitory restrictions in the regulations prepared under the law; these latter were gradually brushed aside, and by 1873 we were in the full tide of "direct importing."

Tonnage of leading articles imported direct to Saint Louis from foreign ports in 1875

	Through New Orleans.	Through eastern ports.
Sugar	17,000	.....
Salt	3,875	.....
Soda	3,000	200
Pig-iron	1,644	.....
Steel	240	.....
Bagging	200	90
Wines and liquors	40	10
Earthenware	1,100	100
Tin	400	100
Dry goods, drugs, &c	40	300
Tobacco	40	10
Glass	.....	20
Prunes	.....	15
Sundries	50	100
Total	27,629	945

Question 26. An effort is being made to ascertain, approximately at least, the quantity of flour, wheat, corn, rye, oats, and barley, also number of cattle, horses, sheep, and hogs, and pounds of provisions shipped from Saint Louis and from States north of the Ohio River into the States south of these limits during the year 1875. For the purpose of presenting such data, you will find inclosed herewith blank marked "A," which you are requested to fill out so far as it may be practicable for you to do so. You are also requested to give your opinion as to the proper points at which to obtain additional data of this sort, in order that a knowledge of the entire movement may be obtained.

Answer. I have filled up the blank marked "A" with the information asked for.

Information of a similar character could be obtained from Chicago of shipments south by the Illinois Central Railroad, care being taken to separate freight for the State of Illinois from that consigned through to the South on through bills of lading. Also, from Cairo, care being taken to give only freight billed from there and not to include freights from northern points shipped through Cairo on through bills of lading. Cincinnati also does a large trade with the South. Pittsburgh ships large quantities of coal to the South, but very little breadstuffs or provisions. From points on the Mississippi River, between Saint Louis and Cairo, nearly all the freight that goes South is controlled in Saint Louis and forms a part of her commerce, being sold here and shipped oftentimes direct from the landing below on Saint Louis bills of lading.

Question 27. Please to state from statistics of tonnage moved on roads extending from Saint Louis in a southerly direction, and from statistics of a similar character in regard to roads extending from Saint Louis in an easterly direction, the relative growth of the southern and eastern movements of commerce during the last ten years. If statistics of total movements cannot be procured, characteristic data may be employed.

Answer. Statistics of tonnage from Saint Louis date back only to 1871. I am unable, therefore, to give the data previous to that year.

	Tons.
Shipments eastward in 1875 were	695,673
Shipments eastward in 1871 were	418,440

An increase of 66⅔ per cent.

	Tons.
Shipments southward by rail in 1875 were	572,684
Shipments southward by rail in 1871	214,340

An increase of $167\frac{13}{109}$ per cent.

Question 28. To what extent is cotton shipped from interior points, via Saint Louis, to ports in the Northern States and in Europe, on direct consignment from such interior points, and to what extent is such cotton purchased by agents of factories? Please also to state how many years since such direct shipments from interior points have been made, and the facts as to the growth of this commercial movement.

Answer. The shipments of cotton from interior points, via Saint Louis, to northern cities and to Europe, during the cotton year ending August 31, 1875, was 39,679 bales. I have no means of ascertaining what proportion of this cotton was purchased for eastern factories, but my impression is that most of it was so purchased, and that very little, if any, was shipped to Europe or to the eastern cities for sale. This movement

was commenced in 1871, most of the exports of that year being cotton consigned directly through Saint Louis to the East.

The amount so shipped through Saint Louis on direct consignment to eastern points has been as follows:

	Bales.
Year ending August 31, 1871	30,000
Year ending August 31, 1872	19,715
Year ending August 31, 1873	25,494
Year ending August 31, 1874	24,323
Year ending August 31, 1875	39,679

Question 29. What proportion of the passenger-traffic between Saint Louis and Memphis, and between Saint Louis and New Orleans, do you estimate is now carried on by the steamboats and by the railroads respectively?

Answer. From the best information I can obtain from steamboat captains and others, the proportion of the passenger-traffic between Saint Louis and Memphis carried on by the steamboats is one-third, and to New Orleans one-quarter.

Steamboat captains tell me that most of the travel by boat is from local points when there is no rail communication.

Question 30. Has not the running of regular passenger-boats on the Mississippi River and its tributaries been quite generally abandoned except as between points not connected by rail?

Answer. Regular passenger-boats, that is, exclusively for passengers, were never run on the western rivers. Formerly, however, boats were run with considerable regularity with the view to accommodate passengers; but this custom has now been generally abandoned, and steamboat captains wait for a load before leaving port. The local packet-lines, however, are an exception, leaving regularly every day; not, however, to catch through passengers, but to reach way-landings with some degree of regularity. I may say, however, that steamboats do not now look for and make no calculation on through-passenger travel. For a month in the winter southward, and for a couple of months in the summer northward, there is some pleasure-travel; but steamboats are now built for freight and not for passengers.

Question 31. Statistics of the increase of the wealth and population of Saint Louis during the last twenty years.

Population of Saint Louis.

1799	925
1810	1,400
1820	4,928
1828	5,000
1830	5,862
1833	6,397
1835	8,316
1837	12,040
1840	16,469
1844	34,140
1850	74,439
1852	94,000
1856	125,200
1859	185,587
1866	204,327
1870, United States census	310,864
1871, estimated	350,000
1872, estimated	400,000
1873	428,126
1874, estimated	450,000
1875, estimated	495,000

Amount of real estate and personal property assessed in the county and city of Saint Louis.

Year.	Saint Louis City and County; real and personal.	City of Saint Louis, real estate.	City of Saint Louis, real and personal.	Rate of taxation in old city limits.
1859	.....	$69, 846, 845	.....	$2 21½
1860	.....	73, 765, 670	.....	2 56½
1861	.....	57, 537, 415	.....	2 40
1862	.....	40, 240, 450	.....	2 57
1863	.....	49, 409, 030	.....	2 42
1864	$77, 713, 534	53, 205, 820	$63, 059, 078	2 60
1865	106, 309, 764	73, 960, 700	87, 625, 534	2 76½
1866	126, 877, 195	81, 961, 610	105, 245, 210	3 00
1867	136, 172, 250	88, 625, 600	112, 907, 660	2 95
1868	144, 960, 138	94, 362, 370	116, 582, 140	2 85
1869	172, 633, 760	113, 626, 410	138, 523, 480	2 85
1870	187, 345, 420	119, 080, 800	147, 969, 660	.....
1871	195, 066, 820	123, 833, 950	158, 272, 430	2 80
1872	200, 318, 410	129, 235, 180	162, 689, 570	2 78
1873	200, 511, 480	149, 144, 400	180, 278, 950	2 76
1874	209, 583, 230	141, 041, 480	172, 109, 270	2 88 5-10
1875	167, 293, 355	131, 141, 020	166, 999, 660	3 48 5-10

Question 32. Please to state, as succinctly as you may be able, the main features of the contest which has been going on for several years between railroads from Chicago and railroads from Saint Louis, with regard to Missouri River points and other competitive points north and west of Saint Louis. In what respects is the contest due to the competition between the roads themselves, and in what respects is it due to competition between the Chicago and Saint Louis markets?

Answer. The contest between Chicago and Saint Louis for the trade of the Northwest, West, and South has been going on ever since the extension of railroads through Iowa to the Missouri River. In the matter of the Northwest, Chicago is the natural outlet, and Saint Louis has been unable to cope with her for the trade of that section of the country, say north of the center of Iowa. For that portion south and west of that line, Saint Louis is the natural center by her geographical position. To compete with Saint Louis for that trade Chicago has relied upon her railroads, which have invariably made rates less in proportion to distance than could be obtained of the roads terminating in Saint Louis. Our people have for years been fighting for equal rates, believing that as Saint Louis had to pay higher freights from the Atlantic seaboard, on account of the greater distance, she should have the benefit of the shorter distance to points west. The justice of this demand has been conceded, and tariffs have been arranged by the Chicago and Saint Louis roads based upon distance. The provisions of these tariffs have been persistently evaded, to the detriment of Saint Louis. Within the past two months, however, arrangements have been made between the Chicago and Saint Louis roads for pooling the earnings of all the lines competing for the western business. A tariff has been established which, although it does not in all respects do justice to Saint Louis, is on a much more equitable scale than any heretofore in force. The idea of the pool is to change the tariff from time to time until it is determined what rates are equitable and just, so that the tonnage will, in the natural course of trade, be about equally divided between the various competing lines. Therefore, I may say that the contest has been due to competition, not between the individual roads, but between the roads running to Chicago and those terminating at Saint Louis. Of course there is more or less competition between the two markets. In the matter of general merchandise Saint Louis offers as great inducements as any other market. In some kinds of produce, Chicago, at times, owing to low freight by water to the East, can offer better inducements than Saint Louis, but with equal freight-rates according to distance each city will control the trade that naturally belongs to it.

Question 33. Have the trunk-lines from Saint Louis to the East ever entered into any pooling arrangement for the transportation of freights from Saint Louis to the East? and, if so, please to mention the principal facts in relation to such pooling.

Answer. The railroad lines from Saint Louis to the East, namely, the Ohio and Mississippi, the Saint Louis, Vandalia, Terre Haute and Indianapolis, the Indianapolis and Saint Louis, the Toledo, Wabash and Western, and the Chicago and Alton, formed a pool in April last, and it is still in operation. The pool only applies to business originating at or destined to points east of Buffalo. The division of pool-earnings is regulated by the average earnings of the three previous years. An auditor keeps a record of the tonnage by each road, and at the close of each month makes a report, and such lines as have hauled freight in excess of their proportion have to pay over

such excess to the other lines, less 50 per cent. allowed for the actual cost of the work performed. That is to say, if one road has earned $3,000 in excess of its proportion, $1,500 has to be paid to the auditor to be divided among the other roads. There is little doubt that the existence of the pool has been a detriment to the business of Saint Louis, as the arbitrary rates maintained here against the low tariffs that have been in force at times from Chicago, Toledo, Cincinnati, and Indianapolis have diverted traffic which would otherwise have come to Saint Louis.

Question 34. Of the total eastern movement of grain and provisions, about what proportion of each do you estimate to have passed directly to the East, and what proportion was shipped to Chicago for a market, or was transported via Chicago direct to the East?

Answer. It is impossible to give even an approximate of the proportion of eastern shipments that passes directly to the East—that is, to the eastern seaboard. Even the auditor of the pool when applied to was unable to give the information. No grain or provisions are shipped from Saint Louis to Chicago for a market, and of the eastern shipments via Chicago roads very little, if any, passes through Chicago—that is, pays any tribute there. The fast-freight lines over the Chicago and Alton Road run through by the Joliet cut-off, and those by the Illinois Central strike the eastern roads outside of the city limits, and therefore do not pass through Chicago, or if any does, it is only in the sense that western freight passes through Indianapolis or Pittsburgh.

Question 35. Please to give the facts as to the limit imposed on rail-rates for the transportation of cotton from Dallas, Tex., to New York or to the New England States by the rates which prevail by rail from Dallas to Galveston, and thence the water rate to New York, or to points in New England. The object in presenting this inquiry is merely to get an illustration of the fact that the transportation of cotton from the cotton-growing States to the Northern and Eastern States by rail is regulated or limited by competitive water-rates generally. It may be that you will be able to give me a better illustration than the one stated above.

Answer. The all-rail rate from Dallas, Tex., to New York and the New England States is controlled entirely by the rate from Dallas to Galveston, and thence by water. In some cases the all-rail route is enabled to take cotton at a slight advance over the rail and water route, when the destination is to interior points in New England, being able to deliver at those points at the Boston rate, while via Galveston an arbitrary rate would have to be paid from Boston. The rates that have prevailed until within the last month were as follows:

	Per bale.
Dallas to New York via Galveston	$5 00
Dallas to New York, all rail, $1.23 per 100 pounds	5 71
Dallas to Boston via Galveston	5 75
Dallas to Boston, all rail, $1.28 per 100 pounds	5 95

The all-rail rate has been advanced to 1.35 to New York and 1.40 to Boston, and the consequence is that none is going forward by rail. Insurance is about the same by either route, as shippers almost without exception insure by rail as well as by water. Therefore, I may say that the all-rail rate from Dallas is controlled by the rate via Galveston, the all-rail route being enabled sometimes to obtain a slight advance by reason of quicker transit and direct delivery to interior points.

Question 36. With respect to what commodities and to what extent do freight-rates from Chicago and Cincinnati to Atlantic sea-ports affect the commercial interests of Saint Louis; and also with respect to what commodities and to what extent do freight-rates from Chicago and Cincinnati to southern points affect the commercial interests of Saint Louis?

Answer. Freight-rates from Chicago and Cincinnati to Atlantic sea-ports affect the commercial interests of Saint Louis in respect to flour, grain, provisions, cotton, lead, wool, and all other heavy freights that find a market in the East and in Europe. To what extent it is difficult to say, but an estimate made for the past six months shows that if the freight on flour, wheat, corn, tobacco, lead, lard, and pork to eastern points had been based on the same rate per mile as prevailed at Chicago, the saving to Saint Louis would have been some $360,000. While this would not all have been a profit to Saint Louis, it would have stimulated trade instead of depressing it. A great many orders have come here for grain and provisions which could not be filled, although prices were satisfactory, for the reason that cheaper freights could be had from other points.

With respect to southern freight-rates—that is, to points east of the Mississippi River—the same are controlled by what is known as the "Green Line" combination, and are arranged so as not to discriminate against either of the large cities.

Question 37. Will you please to prepare a table showing the shortest lines from Saint Louis to Boston, to New York, to Philadelphia, and to Baltimore, respectively, mentioning the roads and parts of roads forming the lines referred to in each case?

Answer:

Distances from Saint Louis to Boston, (short lines.)

1.

	Miles.
Saint Louis to Toledo, (Toledo, Wabash and Western Railroad)	434
Toledo to Buffalo, (Canadian Southern Railway)	277
Buffalo to Albany, (New York Central and Hudson River Railroad)	298
Albany to Boston, (Boston and Albany Railroad)	200
Total	1,209

2.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Cleveland, (Cleveland, Columbus, Cincinnati and Indianapolis Railroad)	283
Cleveland to Buffalo, (Lake Shore and Michigan Southern)	183
Buffalo to Albany, (New York Central and Hudson River Railroad)	298
Albany to Boston, (Boston and Albany Railroad)	200
Total	1,203

3.

	Miles.
Saint Louis to Toledo, (Toledo, Wabash and Western Railroad)	434
Toledo to Buffalo, (Canada Southern Railway)	277
Buffalo to Schenectady, (New York Central and Hudson River Railroad)	230
Schenectady to Troy, (New York Central and Hudson River Railroad)	21
Troy to North Adams, (Troy and Boston Railroad)	48
North Adams to Boston, (Hoosac Tunnel and Fitchburgh Railroad)	143½
Total	1,203½

4.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Cleveland, (Cleveland, Columbus, Cincinnati and Indianapolis Railroad)	283
Cleveland to Buffalo, (Lake Shore and Michigan Southern Railroad)	183
Buffalo to Boston, via Schenectady, Troy and Hoosac Tunnel, (same as in No. 3).	492½
Total	1,197½

Distances from Saint Louis to New York, (short lines.)

1.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Pittsburgh, (Pittsburgh, Cincinnati and Saint Louis Railroad)	381
Pittsburgh to New York, (Pennsylvania Railroad)	444
Total	1,064

2.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Pittsburgh, (Pittsburgh, Cincinnati and Saint Louis Railroad).	381
Pittsburgh to Harrisburgh, (Pennsylvania Railroad)	248
Harrisburgh to Allentown, (Philadelphia and Reading Railroad)	90
Allentown to Easton, (Lehigh Valley Railroad)	17
Easton to New York, (Central Railroad of New Jersey)	75
Total	1,050

Distances from Saint Louis to Philadelphia, (short lines.)

1.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Pittsburgh, (Pittsburgh, Cincinnati and Saint Louis Railroad)	381
Pittsburgh to Philadelphia, (Pennsylvania Railroad)	354
Total	974

2.

	Miles.
Saint Louis to Cincinnati, (Ohio and Mississippi Railroad)	340
Cincinnati to Parkersburgh, (Marietta and Cincinnati Railroad)	195
Parkersburgh to Baltimore, (Baltimore and Ohio Railroad)	385
Baltimore to Philadelphia, (Philadelphia, Wilmington and Baltimore Railroad)	93
Total	1,018

Distances from Saint Louis to Baltimore, (short lines.)

1.

	Miles.
Saint Louis to Cincinnati, (Ohio and Mississippi Railroad)	340
Cincinnati to Parkersburgh, (Marietta and Cincinnati Railroad)	195
Parkersburgh to Baltimore, (Baltimore and Ohio Railroad)	385
Total	920

2.

	Miles.
Saint Louis to Indianapolis, (Vandalia line)	239
Indianapolis to Pittsburgh, (Pittsburgh, Cincinnati and Saint Louis Railroad)	381
Pittsburgh to Harrisburgh, (Pennsylvania Railroad)	248
Harrisburgh to Baltimore, (Nothern Central Railroad)	88
Total	956

TABLE No. 1.—*Quantity of grain, live animals, and provisions shipped south from Saint Louis into Southern Missouri, and States south of Missouri, and south of the Ohio River, during the year* 1875.

Commodity.	How stated.	Quantity.
Flour	Barrels	1,440,690
Wheat	Bushels	493,560
Corn	do	2,259,335
Rye	do	2,360,629
Oats	do	28,652
Barley	do	58,914
Cattle	Number	3,279
Horses and mules	do	15,049
Sheep	do	6,200
Hogs	do	11,050
Provisions, including lard	Pounds	121,665,109
Lumber	M feet	(*)

* None shipped south of the Ohio River, except a small amount into Texas by Missouri, Kansas and Texas Railroad. Shipped by Iron Mountain Railroad, 515 M feet. Shipped by Missouri, Kansas and Texas Railroad, 1,242 M feet. The shipments by Atlantic and Pacific and Missouri Pacific Railroads were to the West.

TABLE No. 2.—*Actual tonnage of all classes of freights shipped from Saint Louis during the year* 1875.

How shipped.	Tons.	Per cent. of total.
By rail—		
North	12,754	00.98
South	389,277	29.91
East	616,993	47.41
West	282,426	21.70
Total by rail	1,301,450	100
By river—		
North	114,695	17.85
South	370,275	57.95
East	129,025	20.25
West	25,100	3.95
Total by river	639,095	100
Total shipped	1,940,545	.....

TABLE No. 3.—*Statement showing the average river and rail rates for the transport of merchandise of the same class from Saint Louis to New Orleans, Vicksburgh, and Memphis, during the year* 1875.

Month.	Rates from Saint Louis—						Stage of water in rivers.
	To New Orleans.		To Vicksburgh.		To Memphis.		
	River rate.	Rail rate.	River rate.	Rail rate.	River rate.	Rail rate.	
January	$0 30	$0 45	$0 24	$0 45	$0 20	$0 25	Good boating state all the year.
February	30	45	12½	45	12½	25	
March	19	40	20	40	17½	25	
April	10 5-7	40	12½	40	12½	25	
May	20	40	20	40	15	25	
June	20	35	20	35	15	23	
July	20	35	20	35	15	23	
August	20	35	20	35	15	23	
September	25	35	25	35	20	23	
October	25	35	25	35	20	23	
November	30	35	30	35	20	23	
December	28½	35	30	35	20	23	

TABLE No. 4.—*Statement showing the average rail-rates for the transport of merchandise from Saint Louis to four important points at the south and southeast, not on any navigable river or affected by water-transportation, during each month of the year* 1875.

Month.	Rates from Saint Louis—				
	To Chattanooga, Tenn.	To Jessup, Ga.	To Nevada, Mo., on Missouri, Kansas, and Texas Railroad.	To Fort Gibson, Ind. Ter.	To Denison, Tex.
January	$0 60	$0 75	$0 65	$1 35	$1 10
February	60	75	65	1 35	1 10
March	60	75	65	1 35	1 00
April	60	75	65	1 35	1 00
May	60	50	65	1 35	1 00
June	60	50	65	1 35	1 00
July	60	50	65	1 35	1 00
August	40	50	65	1 35	1 00
September	40	50	65	1 35	1 00
October	40	50	65	1 35	1 00
November	52	50	65	1 35	1 00
December	52	50	65	1 25	95

TABLE No. 5.—*Average actual freight-charges on compressed cotton by rail from Saint Louis to New York, to Providence, to Boston, and to Lowell, Mass., during each month of the year* 1875

Month.	Average monthly rates—			
	To New York.	To Boston.	To Providence.	To Lowell, Mass.
January	$0 63	$0 68	$0 68	$0 68
February	60	65	65	65
March	60	65	65	65
April	60	65	65	65
May	60	65	65	65
June	55	60	60	60
July	55	60	60	60
August	55	60	60	60
September	55	60	60	60
October	50	55	55	55
November	63	68	68	68
December	63	68	68	68

NOTE.—All cents per 100 pounds.

TABLE No. 6.—*Number of bales of cotton received at Saint Louis by river and by rail during the past ten years.*

Year.*	Bales received—		Total bales received.
	By river.	By rail.	
1866	53, 506	1, 921	55, 427
1867	1[illegible], 712	1, 066	19, 778
1868	38, 804	220	39, 024
1869	16, 614	82	16, 696
1870	17, 034	1, 484	18, 518
1871	15, 582	4, 688	20, 270
1872	30, 018	6, 403	36, 421
1873	26, 577	33, 132	59, 709
1874	27, 538	76, 203	103, 741
1875	11, 750	122, 219	133, 969

* Cotton year, ending August 31.

TABLE No. 7.—*Statement showing the average freight charges by steamboat from Saint Louis to New Orleans during the years* 1873 *and* 1874.

Articles.	Year—	
	1873.	1874.
Wheat ..... per bushel..	$0 16 1-5	$0 12½
Flour ..... per barrel..	42½	40
Corn ..... per bushel..	15. 12	11½
Rye ..... do.....	15. 12	11½
Oats ..... do	8. 65	6½
Bacon ..... per 100 lbs..	24	18
Hams ..... do.....	24	18
Pork ..... per barrel..	85	60
Lard ..... per 100 lbs..	24	18
Hay ..... do.....	35	26½

TABLE No. 8.—*Average freight charges from Saint Louis to New Orleans by the barge line for the years* 1873, 1874, *and* 1875.

Articles.	1873.		1874.		1875.	
	High water.	Low water.	High water.	Low water.	High water.	Low water.
Flour ..... per barrel..	$0 25	$0 45	$0 25	$0 40	$0 30	$0 50
Corn ..... per bushel..	7	12½	7	11 1-5	8 4-10	14
Rye ..... do.....	7½	12½	7½	12	9	15
Oats ..... do.....	4	7 1-5	4	6 4-10	4 8-10	8
Barley ..... per 100 lbs..	12½	22½	12½	20	.....	.....
Bacon ..... do.....	.....	.....	.....	.....	15	25
Hams ..... do.....	12½	22½	12½	20	.....	.....
Pork ..... per barrel..	37½	37½	37½	20	45	75
Lard ..... per 100 lbs..	12½	22½	12½	20	15	25
Hay ..... do.....	17½	27½	17½	25	20	35
Lowest rate per 100 pounds	.....	12½	.....	10	.....	12½
Highest rate per 100 pounds	.....	35	.....	40	.....	35

TABLE No. 9.—*Flour and grain received at Saint Louis by river and by rail, each year, 1865 to 1875.*

Year.	Quantities received.			
	Flour, barrels.		Grain, bushels.	
	By river.	By rail.	By river.	By rail.
1865	1,325,505	195,960	9,635,728	2,034,500
1870	499,132	915,205	7,997,431	8,253,396
1871	345,181	1,001,877	6,575,854	11,874,348
1872	261,677	945,304	6,749,945	15,428,136
1873	213,883	1,036,367	5,935,648	14,902,248
1874	222,073	1,367,170	6,078,258	15,652,712
1875	178,599	1,075,711	5,487,686	14,009,986

TABLE No. 10.—*Statement showing the tonnage of freight received at Saint Louis from the East by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Ohio and Mississippi Railroad	280,557	319,217	337,074	312,220	305,773
Chicago, Alton, and Saint Louis Railroad	184,834	195,691	203,765	218,972	218,227
Indianapolis and Saint Louis Railroad	134,634	134,498	139,484	144,610	46,611
Saint Louis, Vandalia and Terre Haute Railroad	319,658	276,138	294,445	126,035	204,293
Toledo, Wabash and Western Railroad	108,940	118,481	142,282	129,183	82,905
Illinois and Saint Louis Railroad	213,443	215,252	202,929	126,565	114,673
Total by rail	1,242,066	1,259,277	1,319,929	1,055,585	972,482

TABLE No. 11.—*Statement showing the tonnage of freight received at Saint Louis from the West by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Atlantic and Pacific Railroad	196,968	196,891	149,007	104,642	72,273
Missouri Pacific Railroad	229,447	328,201	344,375	256,937	207,185
Saint Louis, Kansas City and Northern Railroad	266,091	253,159	278,335	241,810	204,959
Total	692,504	778,251	771,717	603,389	484,417
Missouri River	30,160	44,830	38,630	26,895	72,579
Total by river and rail	722,668	823,081	810,347	630,284	556,996

TABLE 12.—*Statement showing the tonnage of freight received at Saint Louis from the North by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Rockford, Rock Island and Saint Louis Railroad	60,993	107,151	46,304	95,790	60,793
Illinois River	153,995	192,770	125,715	175,370	146,000
Upper Mississippi River	198,100	231,060	281,175	242,584	236,887
Total	352,095	423,830	406,890	417,954	382,887
Total by rail and river	413,088	530,981	453,194	513,744	443,680

TABLE 13.—*Statement showing the tonnage of freight received at Saint Louis from the South by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Saint Louis and Iron Mountain Railroad	451, 225	292, 842	392, 634	504, 705	291, 505
Missouri, Kansas and Texas Railroad	53, 885	65, 734	73, 291	50, 150	.....
Saint Louis and Southeastern Railroad	221, 634	216, 898	177, 611	140, 049	96, 663
Cairo and Saint Louis Railroad	103, 808	82, 470	17, 927	.....	.....
Belleville and Southern Illinois Railroad	406, 653	362, 470	445, 765	388, 696	394, 371
Total	1, 237, 205	1, 020, 414	1, 107, 228	1, 083, 600	782, 539
Lower Missouri River	128, 020	169, 760	226, 535	295, 960	313, 211
Red, Ouachita, Arkansas, and White Rivers	100	340	1, 075	3, 720	4, 176
Ohio, Cumberland, and Tennessee Rivers	153, 150	93, 985	127, 925	119, 390	111, 548
Total	281, 270	264, 105	355, 535	419, 070	428, 935
Total by rail and river	1, 518, 475	1, 284, 519	1, 462, 763	1, 502, 670	1, 211, 474

TABLE 14.—*Received at Saint Louis by rail.*

	1875.	1874.	1873.	1872.	1871.
East	1, 242, 066	1, 259, 277	1, 319, 929	1, 055, 585	972, 429
West tons	692, 506	778, 251	771, 717	603, 389	484, 417
North do	60, 993	107, 151	46, 304	95, 790	60, 793
South do	1, 237, 205	1, 020, 414	1, 107, 228	1, 083, 600	782, 539
Total do	3, 232, 770	3, 165, 093	3, 245, 178	2, 838, 364	2, 300, 231

Received at Saint Louis by river.

East	.....	.....	.....	.....	.....
West tons	30, 160	44, 830	38, 630	26, 895	72, 579
North do	352, 095	422, 830	406, 890	417, 954	382, 887
South do	281, 270	264, 105	355, 535	419, 070	428, 935
Total do	663, 525	732, 765	801, 055	863, 919	884, 401
By rail do	3, 232, 770	3, 165, 093	3, 245, 178	2, 838, 364	2, 300, 231
By river do	663, 525	732, 765	801, 055	863, 919	884, 401
Total tons	3, 896, 295	3, 897, 858	4, 046, 233	3, 702, 283	3, 184, 632

TABLE 15.—*Statement showing the tonnage of freight shipped east from Saint Louis by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Ohio and Mississippi Railroad	108, 998	145, 914	158, 523	177, 482	118, 757
Chicago, Alton and Saint Louis Railroad	135, 647	97, 885	81, 158	62, 454	122, 604
Indianapolis and Saint Louis Railroad	138, 307	175, 389	152, 669	164, 624	22, 985
Saint Louis, Vandalia and Terre Haute Railroad	137, 884	139, 831	100, 544	96, 529	98, 939
Toledo, Wabash and Western Railroad	74, 837	62, 618	68, 204	38, 507	49, 145
Total by rail	595, 673	621, 637	561, 098	539, 596	418, 440

TABLE 16.—*Statement showing the tonnage of freight shipped west from Saint Louis by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Atlantic and Pacific Railroad	34, 881	30, 133	39, 962	37, 908	38, 715
Missouri Pacific Railroad	151, 980	171, 987	162, 435	228, 920	204, 926
Saint Louis, Kansas City and Northern Railroad	130, 446	94, 289	99, 777	122, 010	107, 292
Total by rail	317, 307	296, 409	302, 174	388, 838	350, 933
Missouri River	25, 100	20, 390	27, 810	27, 536	44, 438
Total by river and rail	342, 407	316, 799	329, 984	416, 374	395, 371

TABLE 17.—*Statement showing the tonnage of freight shipped north from Saint Louis by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Rockford, Rock Island and Saint Louis Railroad	12, 754	11, 546	9, 551	13, 984	14, 875
Total by rail	12, 754	11, 546	9, 551	13, 984	14, 875
Upper Mississippi River	96, 225	95, 800	61, 966	55, 235	78, 967
Illinois River	18, 470	13, 740	11, 695	15, 930	10, 936
Total by river	114, 695	109, 540	73, 661	71, 165	89, 903
Total by rail and river	127, 449	121, 086	83, 212	85, 149	104, 778

TABLE 18.—*Statement showing the tonnage of freight shipped south from Saint Louis by each railroad and river for five years.*

Route.	1875.	1874.	1873.	1872.	1871.
Saint Louis and Iron Mountain Railroad	211, 725	155, 189	122, 605	156, 376	123, 777
Missouri, Kansas and Texas Railroad	40, 635	39, 337	54, 956	42, 494	.....
Saint Louis and Southeastern Railroad	25, 944	44, 845	53, 000	30, 286	23, 539
Illinois and Saint Louis Railroad	7, 359	10, 000	6, 595	4, 753	3, 608
Belleville and Southern Illinois Railroad	76, 092	37, 753	39, 917	28, 337	24, 710
Cairo and Saint Louis Railroad	13, 961	13, 968	5, 520	.....	.....
Total by rail	375, 716	301, 092	282, 593	262, 246	175, 634
Lower Mississippi River	367, 235	469, 065	525, 445	543, 666	477, 970
Red, Ouachita, Arkansas, and White Rivers	1, 480	5, 445	34, 640	32, 690	42, 995
Cumberland and Tennessee Rivers	1, 560	2, 225	2, 140	2, 040	2, 534
Ohio River	129, 025	100, 660	119, 660	127, 985	112, 652
Total by river	499, 300	577, 395	681, 885	706, 381	636, 151
Total by rail and river	875, 016	878, 487	964, 478	968, 627	811, 785

Shipped from Saint Louis by rail and river.

	1875.	1874.	1873.	1872.	1871.
By rail:					
East ..... tons..	595, 673	621, 637	561, 098	539, 596	418, 440
West ..... do...	479, 394	296, 409	302, 171	388, 838	350, 933
North ..... do...	12, 754	11, 546	9, 551	13, 984	14, 875
South ..... do...	375, 716	301, 092	282, 593	262, 246	175, 634
Total by rail ..... do...	1, 463, 537	1, 230, 684	1, 155, 416	1, 204, 664	959, 882
By river:					
East ..... tons..	.....	.....	.....	.....	.....
West ..... do...	25, 100	20, 390	27, 810	27, 536	44, 438
North ..... do...	114, 695	109, 540	73, 661	71, 165	89, 903
South ..... do...	499, 300	577, 395	681, 885	706, 381	636, 151
Total by river ..... do...	639, 095	707, 325	783, 356	805, 082	770, 492
Total by rail and river ... do...	2, 102, 632	1, 938, 009	1, 938, 772	2, 009, 746	1, 730, 374

APPENDIX No. 14.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF NEW ORLEANS, AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY BY RIVER AND BY RAIL, BY MR. HENRY G. HESTER, SECRETARY OF THE NEW ORLEANS COTTON EXCHANGE. 1876.

Question 1. Please to describe the various trunk railroads into New Orleans, stating the connections of such roads north and east, also facts in relation to the ownership or management of such lines.

Answer. New Orleans has but two trunk-lines of railway, viz, the New Orleans, Saint Louis and Chicago, and the New Orleans and Mobile Railroad.

The New Orleans, Saint Louis and Chicago Railroad is the result of a consolidation in July, 1874, of the New Orleans, Jackson and Great Western Railroad, leading northward from New Orleans, La., through about the center of Mississippi, to the town of Canton, in the latter State, which was opened for business in the year 1859, and the Mississippi Central Railroad, from Canton, Miss., to Jackson, Tenn., and thence by a recent extension to Cairo, Ill., where connection is made by boat across the Mississippi River with the Illinois Central Railroad for points north, east, and west. This company has continuous line from New Orleans to Cairo of 545 miles with a branch 21 miles long from Durant to Kosciusko. The two roads had been worked for some years prior to consolidation by the Southern Railroad Association, which also worked as a branch line the Mississippi and Tennessee Road from Granada, Miss., northwest to Memphis, say about 100 miles. A glance at the following statement will show the importance of this route, and that the amount of its business entitles it to rank as the second leading railroad corporation of the South:

	Year, June 30, 1875.	Year, Dec. 31, 1873
Capital stock paid up	$12,158,650	$10,169,535
Funded debt	21,791,615	16,000,000
Cost of road and equipment	32,598,667	31,942,393
Passenger earnings	767,070	880,567
Freight earnings	2,228,567	2,162,307
Total gross earnings	3,184,321	3,232,160
Operating expenses	1,820,377	1,671,135
Net earnings	1,363,944	1,561,025

This line traverses one of the most productive sections in the cotton belt, and transports to New Orleans about 14 per cent. of the quantity received at that point, as will be seen by an examination of the following table:

Receipts of cotton at New Orleans.

Year ending August 31—	Per N. O., St. L., and C. R. R.	Other sources.	Total.
1875 ..... bales..	242,302	750,180	993,482
1874 ..... do....	280,436	941,262	1,221,698
1873 ..... do....	271,537	968,847	1,240,384
1872 ..... do....	197,260	760,278	957,538
1871 ..... do....	203,496	1,242,994	1,446,490

It serves as a partial outlet for cotton from Mississippi, Tennessee, and Arkansas, and connecting at Jackson, Miss., with the Vicksburgh and Meridian Road, running east to Selma, Ala., transports the staple in moderate quantities from the center of that State to New Orleans.

Notwithstanding its extensive business, the expenses of this road in repairing damages to the lower end of the road from the Bonnet Carré crevasse of the Mississippi and the cost of the Cairo extension have caused it to fail in prompt payment of its indebtedness. On the 10th of March, 1876, the United States circuit court of New Orleans issued an order placing it in the hands of a receiver.

Suits have been brought in the United States circuit court for Mississippi and that

for West Tennessee for foreclosure of mortgage of May 1, 1872, under which $5,419,000 bonds issued to the Illinois Central Railroad were secured. These bonds were issued to the Illinois Central Railroad in exchange for bonds of that road upon which the money for the completion of the Cairo extension was raised.

The New Orleans and Mobile Road extends from New Orleans in an easterly direction to Mobile, Ala., a distance of 140 miles. At Mobile, it connects with the Mobile and Montgomery and Mobile and Ohio Roads for all points north and east.

This road has been in the hands of Edwin D. Morgan and James A. Raynor as trustees and receivers since January, 1875.

A recent report of the trustees gives the following comparative statement of its gross earnings and operating expenses for the two years ending January 31, 1875.

	1876.	1875.
Gross earnings:		
Passengers	$250,133 49	$293,798 94
Freight	401,477 05	411,863 68
Mails	18,200 00	18,200 00
Express freight	13,127 46	7,278 39
Telegraph service	687 33	1,022 98
Miscellaneous sources	11,488 79	8,859 08
Rents	5,940 45	.....
Total	701,054 57	746,023 07
Gross expenses	648,455 19	560,558 38
Net earnings	52,599 38	185,464 69

Number of passengers transported over this road within the twelve months ending January 31, 1876: Eastward, 63,676, and westward, 66,871; of these, 46,447 traversed the entire length of the road from New Orleans to Mobile, and 23,209 from Mobile to New Orleans.

During the year ending January 31, 1876, 143,232 tons of freight were moved from all points over this road, against 137,555 the previous year. The number of bales of cotton moved west (to New Orleans) during same year were 90,897, and east (from New Orleans) 1,064; a total of 91,961, against 128,983 in 1874-'75.

The numerous bridges on this route, covering stretches of salt water, have necessitated the building of creosote works for the preparation of piles and such bridge timbers as are submerged, so as to successfully resist the inroads of insects, which undermine and frequently destroy bridge foundations. These works, though not entirely completed, are yet sufficiently advanced to give full assurance of their success. The trustees state in their report that the result already obtained approves the expenditure for their construction. The piles which have been treated have absorbed an average of about two hundred and ten gallons of creosote oil for each pile. It is believed there will be an absorption of oil equal to more than two gallons for each cubic foot of timber where the works are fully complete.

Question 2. A table presenting the tonnage received at New Orleans and shipped from New Orleans by river and by each one of the railway lines.

If this cannot be stated accurately, it may be stated approximately. (See table marked "A.")

Answer. Almost insurmountable obstacles have been met with in preparing an answer to this question, not so much from the want of data, as the almost total absence of satisfactory compilations. Great care has been taken, however, and a reliable aggregation is herewith presented in table marked "A."

Tonnage received at and shipped from New Orleans during the year 1875 *by river and by rail*

By—	Received.	Shipped.
Mississippi River	724,198	236,694
The following railroads:		
New Orleans, Saint Louis and Chicago Railroad	117,464	68,499
New Orleans, Mobile and Texas Railroad	54,599	67,480
Morgan's Texas Railroad	44,677	30,427

In stating the tonnage received at and shipped from New Orleans via the Mississippi River, it has been found impossible to make the distinctions requested in the note to table "A." No tables making such distinctions have been kept, and so there is given above the total tonnage in and out by the river and the total in and out by the several railroads.

Question 3. Please to present facts in relation to the change which has taken place in regard to the distribution of grain and flour, and also of provisions, to Gulf ports from New Orleans during the last twenty years. Is not a very large part of the Gulf States, formerly supplied with flour, grain, and produce via New Orleans, now supplied from the Western States direct by rail?

Answer. During the war all lines of trade and commerce were more or less interrupted in the southern country. For a considerable portion of the time the commerce of the Mississippi River was entirely suspended, and the flour, wheat, corn, oats, and provisions that found a market at New Orleans and other points of distribution along the river and gulf coast were forced to seek other markets. It is true public exigencies, in a large measure, provided a ready consumption for those commodities; but during the suspension of commercial intercourse between the West and the South the lines of communication between the West and the East were strengthened, and the commerce of the great West quickly adopted those lines as its only means of outlet to the seaboard and the consumptive markets of the world. With the restoration of peace between the States, it was generally thought the old relations between the West and the South would be restored; that the commerce in breadstuffs and provisions which formerly existed between this port and Mexico, Central America, and the Gulf islands would revive. These calculations were only partially realized. Millions of capital had been invested in the new lines of communication between the West and the East, and these proved sufficiently powerful to prevent a complete renewal of the old relations between the Northwest and the Gulf States. To the extent of the local necessities of the South there was, of course, a complete restoration; and for two or three years immediately following the final overthrow of the rebellion there was more than ordinary activity, caused by the impoverished condition of the southern section. Supplies of all kinds were needed, and the aggregation of western shipments received at New Orleans during the six years succeeding the war was about equal to the most prosperous periods antedating the war. In the years 1855 to 1859 the average annual receipts of flour were 1,141,680 barrels, and of grain 5,725,488 bushels. In 1870 the receipts were, of flour 1,641,477 barrels, and of grain 5,914,112 bushels. But while there was no apparent loss in the aggregate receipts, there was a considerable decline in the shipments coastwise and foreign. The average coastwise shipments of flour in the years 1855 to 1859 were 454,170 barrels, whereas in 1870 they declined to 327,444 barrels. In the exports proper the loss of trade to the port of New Orleans was most marked in grain, the annual average for the years 1855 to 1859 being 1,294,380 bushels, but in 1870 they were only 168,746 bushels. It is true this loss in the export trade in grain was largely recovered in the years 1873, 1874, and 1875, but the export movement of flour declined lower and lower, being 273,500 barrels (average) in 1855, and only 78,893 barrels in 1872, 68,867 barrels in 1873, 180,354 in 1874, and 94,876 in 1875.

The same features characterize the provision-trade of the periods named; but the changes of the last twenty years in the trade of New Orleans in flour, grain, and provisions have not all been stated or accounted for. The interstate war was followed by a spirit of commercial expansion. The war was something more than a partisan strife, and its issue was the explosion of an overcharged system, giving vent to grander ideas of interstate commerce than had previously existed. No longer restrained by abnormal systems, but moving out into the wide field of endeavors founded strictly upon compensated labor, the commercial spirit ceased to be conservative, and aided by a currency system peculiarly adapted to the occasion, became almost resistless. The barriers between the East and the West were overcome, and vast regions, which at the time of the war were peopled only by savage tribes, were speedily converted into well-populated and immensely-productive States. As affecting the Gulf States, the focal center of this expansion was the Northwest. The results are seen in improved means of communication and transfer between the Ohio Valley and the Upper Mississippi regions and the entire body of the South and Southwest. The second tier of States from the Gulf, and to a large extent also the States immediately bordering on the Gulf, all formerly within the territorial margins of the trade and commerce of New Orleans, were thus brought into direct commercial relations with the supply-markets of the North and Northwest. In the year 1874 was the period when trade became most sensibly affected by railroads, when the flour receipts at New Orleans dropped down from 1,541,281 barrels in 1871, and 1,502,206 barrels in 1873, to 937,785 barrels, this being followed by a further decline to 786,281 barrels in 1875. From the same cause followed a like decline in the distribution of grain and provisions from New Orleans. The receipts of mess pork at New Orleans in 1871 were 125,727 barrels, but in 1874 they were only 72,976 barrels. So also of bacon, of which the receipts in 1871-'72 were 37,374 casks and 10,319 boxes, but in 1874 they were 27,985 casks and 7,915 boxes, and in 1875 only 15,503 casks and 6,969 boxes.

Twenty years ago the entire States of Louisiana, Texas, Mississippi, and Alabama, and large portions of Arkansas, Tennessee, and Georgia, obtained their supplies of provisions, breadstuffs, groceries, and even dry goods, from New Orleans. This was largely the case even ten years ago, but now the local trade is confined to Louisiana, Southern Texas, and only small portions of Mississippi, Alabama, Georgia, Florida, and Arkansas. Railroads leading down from the West have penetrated in every direction and touched the Gulf coast at several points. Little by little they have drawn shipments away from the river. First, the passenger business was transferred to the railroads, and, by reason of the increased demands for quick carrying-power and diminished running-expenses, the railroads have at last come into absolute competition with the river, being now able to transfer almost any article of commerce at river-rates, adding insurance thereto. This is true even of freights received at New Orleans, but it is known that the great trunk lines between the South and the Northwest can carry outgoing freights at approximately one-half the cost of incoming freights. Grain, flour, and, largely, provisions still prefer the river in shipments direct to New Orleans, but the advantages thus obtained for those commodities are not sufficient to counteract the advantages of railroad transportation to the people of the States contiguous to Louisiana on freights shipped directly from the supply-markets of the North and Northwest. It is therefore true that a very large part of the Gulf States formerly supplied with flour, grain, and produce via New Orleans is now supplied from the Western States direct.

Question 4. Has cotton ever been shipped from New Orleans direct to northern ports, *i. e.*, ports north of the State of North Carolina, by rail, and has cotton been shipped from New Orleans direct to northern mills by rail-lines?

Question 5. What are the charges incurred at New Orleans on cotton under the following circumstances: 1st. For transfer from boats to ocean-vessel where shipped on through bills from interior points to northern ports or to ports in Europe? 2d. For transfer from railroad to ocean-vessel when shipped on through bills from interior ports to northern ports or ports in Europe? 3d. When brought to New Orleans for market and shipped thence to northern ports or to ports in Europe?

Answer to questions 4 and 5. The amount of cotton shipped from New Orleans by rail direct to northern ports is too trifling to deserve special mention; not more than 1,000 bales per annum. About 2,000 to 2,500 bales of refuse (that is, damaged and linters, the latter consisting of reginnings from seed used by cotton-seed-oil factories, producing a short staple suitable only for cotton-batting) are shipped to points in the West for local manufactures. This refuse is a natural concomitant of all large cotton-markets. No charge is made upon cotton transferred from boats to ocean-vessels at New Orleans on through bills of lading from interior points to northern ports or ports in Europe. It is stipulated at the point of original shipment that such cotton shall be compressed in manner suitable for shipping, or that the cost of necessary compressing is included in the rate of freight, the article, as a rule, being consigned direct to the agent of the vessel which is to transport it from New Orleans to its final point of destination.

Through cottons by rail, when drayed through the city to vessel, are subject to a charge of twenty cents per bale drayage when compressed, and twenty-five cents per bale when not compressed. As but little uncompressed cotton is received on through bills of lading, the latter charge may be considered nominal.

The following *pro-forma* account sales of cotton received and sold by a New Orleans cotton factor for account of the producer, and of cotton purchased by a buyer in New Orleans and shipped to Liverpool in fulfillment of an English spinner's order, give a full showing of the charges upon cotton from the period of its shipment (including cost of such shipment) from the interior until it reaches its point of destination in a foreign port:

B.

Sale of ten bales cotton by S. L. B. & Co. for account of John Jones & Co. Received per steamer Natchez. Sold to Schmidt & Co.:

[Pro forma.]

Marks.		Marks.	
A. D. X	480	A. D. X	480
A. D. X	520	A. D. X	508
A. D. X	440	A. D. X	460
A. D. X	460		
A. D. X	502		4,790
A. D. X	480		
A. D. X	460		

Ten bales cotton, weighing 4,790 pounds, at 10 cents $479 00

Charges:

Freight, $10; charges per B. L. $	$10 00	
River or railroad insurance on $50, at ¼ per cent	2 50	
Fire insurance at ⅜ on sale one month, at ⅜ per cent. per month	1 79	
Storage, weighing, and labor, at 75 cents per bale	7 50	
Brokerage on sale, at ¼ per cent	1 19	
Commission on sale, at 2½ per cent	11 98	
		34 96
E. E. Currency. Net proceeds		444 04

New Orleans, 13 April, 1876.

S. L. B. & CO.,
Per SMITH.

The charge for freight in above account sale is from Vicksburgh by river. This, of course, would vary in accordance with the point of shipment. The fire insurance covers cotton while in press storehouse awaiting sale.

C.

Pro-forma invoice of 500 *bales cotton bought here by order of* ——— ———, *and shipped for their account and risk on board the* —— —— *for Liverpool unto order. Freight,* ⅛*d.*

L. F. B. $\frac{}{500}$ = 500 bales middling cotton, weighing 223,530 lbs., at 12½ c. $27,941 25

Charges:

Brokerage, ¼ per cent	$139 71	
Drayage, 25 cents	125 00	
Reweighing and inspection, 25 cents	125 00	
Fire insurance $28,000, at ¼ per cent	35 00	
		424 71
		28,365 96
Commission, 2½ per cent		709 15
		29,075 11
Bill brokerage, ⅛ per cent		36 39
		29,111 50

E. E. NEW ORLEANS, *April* 13, 1876.

No difference occurs in charges upon shipments to northern ports, except in the rates of freight, which to all points vary in accordance with the usual laws of supply and demand.

Question 6. What classes of imported goods are shipped from New Orleans chiefly by rail?

Answer. In answering question No. 10, some statements are made which will further explain the answer to be made to interrogatory No. 6.

In running over the shipping-bills of the several railroads, we find a large movement of imported merchandise of the following descriptions: tropical fruits and nuts; crockery, all kinds; wines and liquors, fancy groceries, drugs and medicines, indigo, soda-ash, sulphur, (largely,) some coffee, French glass, woods, (such as cedar, rosewood and mahogany,) marble, and cigars.

Question 7. What classes of imported goods are shipped chiefly by river?

Answer. All the imported articles mentioned above are also moved via the river, but that route of transfer is almost exclusively employed in the shipment of railroad iron, Cuba sugar, salt, cement, clay-pipe, hardware, tin-plate, and coffee.

Question 8. What kinds of merchandise are now received from points north of Cairo chiefly by rail?

Answer. The kinds of merchandise now received at New Orleans from points north of Cairo chiefly by rail are indicated, as far as they can be, by the subjoined table, showing the receipts in 1875 via the New Orleans, Saint Louis and Chicago and the New Orleans and Mobile Railroads.

It is perhaps stating the case too strongly to say that these articles are received "chiefly by rail." Railroad and river charges have very nearly approximated, and the transportation business divides very evenly between the river and the railroad in proportion to the capacity of the latter.

Almost any article can be carried by the railroads by the addition of rates of insurance to ordinary river charges.

Merchandise received at New Orleans by rail from points north of Cairo for the year ending June 30, 1875, estimated in pounds.

Agricultural implements	624,924
Bagging	1,030
Beef, pork, lard, &c	5,919,202
Bacon	17,501,833
Coffee from New York	96,668
Fruits, vegetables, &c	5,101,362
Flour and meal	13,536,846
Furniture	359,072
Corn	4,989,398
Other grain	2,941,333
Hay and fodder	669,877
Hides	681,740
Ice	394,350
Liquors	11,000,722
Lumber	1,458,280
Machinery	401,585
Oil	3,746,760
Potatoes	570,908
Sugar	1,944
Live stock	7,919,275
Tobacco	1,500,000
Wool	4,820
Dry goods and miscellaneous	33,000,000
Government freights	1,400,000
Total	113,811,949
Add 15 per cent. to cover like receipts via the New Orleans, Mobile and Texas Railroad	17,071,791
	130,883,740

Question 9. What kinds of merchandise are now shipped from New Orleans to points north of Cairo, chiefly by rail?

Answer. This question is best answered by a table showing the actual movements over the New Orleans, Saint Louis and Chicago Road for the year ending June 30, 1875, as follows:

	Pounds.
Bagging	57,458
Bacon	18,322
Beef, pork, lard	2,102
Cotton	362,530
Cotton-ties	344,393
Coffee	4,763,266
Fruits, vegetables, &c	4,220,566
Furniture	19,325
Hides	5,417,164
Liquors	484,909
Molasses	10,581,294
Moss	473,678
Machinery	7,655
Oil	66,194
Potatoes	1,259,041
Rice	2,907,055
Sugar	21,914,098
Salt	60,000
Leaf-tobacco	1,363,978
Wool	148,496
Miscellaneous	8,296,098
Total	62,763,820

If 10 per cent. be added to the above, there will be obtained an approximate estimate of the total shipments by rail from New Orleans to points north of the Ohio River, or to the North generally. That would give as the grand total of such shipments 69,040,202 pounds, or 34,520 tons.

Of the kinds of merchandise shipped chiefly by rail to points north of Cairo may be enumerated cotton-seed oil, hides, plaster, moss, vegetables, domestic and imported

nuts, domestic and foreign fruits, imported fancy groceries, considerable coffee, indigo, and drugs, rosin, cigars, cotton, tin-plate, paper-stock, and wool.

Question 10. Please to state any facts of interest which may occur to you in regard to the development of the commerce of New Orleans with Cuba and Central and South America, via New Orleans, with the Northern and Northwestern States, stating the products of those countries which seek the cheaper transportation by river, or the more expensive transportation by rail.

Answer. The articles of western production which enter most largely into the commerce of New Orleans with Cuba, Mexico, Central and South America, are provisions, flour, and grain. Under favoring circumstances the exportation of these commodities to the countries named, through the port of New Orleans, might be largely increased. As to Cuba, the duty imposed on flour by Spanish authority amounts almost to an exclusion—duty, including war-tax, being equivalent to about $8 per barrel.

Under these circumstances wheat might be exported to Spain, there manufactured into flour, and thence shipped to Cuba and sold in successful competition with flour made in the United States and shipped direct to Cuba.

The export-trade of New Orleans in flour with that island has been materially lessened by this discrimination made by Spanish laws against the product of American mills. It is ascertained that the great bulk of the flour consumed on the island is obtained from old Spain. The exports of flour from New Orleans to Cuba last year (1875) were 82,897 barrels against 140,189 in 1874. It would appear reasonable to expect, if this discrimination against American flour was removed, and the relations of the two countries established upon grounds of true commercial reciprocity, that the shipments of flour from this port to Cuba would be three or four times greater than they are. But the relations of the trade in western productions with the countries named, through the port of New Orleans, deserve a more elaborate exposition. Grain, for instance, (and flour and provisions correspondingly,) can be furnished from the West to Cuba 5 to 7 cents per bushel cheaper via New Orleans than from any other point. The merchants of the South, and largely the producers of the West, know this. At present Philadelphia, Baltimore, and New York, having regular lines of steamers, are thereby enabled to overcome this difference in cost of transportation. The hope of obtaining similar lines, not only to Cuba but also to Mexican, Central American, and South American ports, appears to be the foundation on which a large proportion of the people of the West and South build their expectations of the future opening and expansion of trade over this direct line. It is believed by them that a subsidized postal line or lines of steamers to the ports named would speedily revive this trade and secure to the Northwestern States almost the exclusive privilege of supplying those markets direct with all great staples of western production at a saving to the producer of the extra cost of transportation now incident to shipments made from the cities of the Atlantic seaboard. The saving to the western producer on flour would be about $1 per barrel. The want of such a line for postal service is also demonstrated in the fact it is not unusual for letters mailed at Havana to be 30 days in reaching New Orleans.

The importance to the Northwestern States of direct trade between New Orleans and the countries named would seem to be established by the facts already mentioned, but further details will prove interesting. Incident to a regular postal line from New Orleans to Rio de Janeiro, would be certain ports of call, Kingston, Laguayra, Georgetown, Parimaribo, Cayenne, and Trinidad, all on the direct route from New Orleans to Rio. In touching at these call-ports steamers would not have to go out of their way, and being in close proximity, it is not improbable that a trade would readily be established with them not less important than that with Brazil. The longest time between these call-ports would be five days, and the shortest two days. The exports to Brazil from the United States in 1874 were valued at $27,519,920. More than $17,000,000 of that amount the West could supply through the port of New Orleans at less cost, and in less time than can be done from any other port, 5 to 7 cents per bushel on grain, and $1 less per barrel on flour, and correspondingly cheaper on provisions, the saving inuring to the benefit of western producers.

The imports into the United States from Brazil in 1874 were $67,020,619. It is fairly estimated that one-half of these imports went to Western and Northwestern States and the Mississippi Valley, and, on normal relations, were required by those sections, via New Orleans, as the most direct and cheapest line of transport.

About 73 per cent. of all the coffee brought into the United States is from Brazil. In 1875 the importation was 1,713,805 bags, of which 200,536 bags were entered at the port of New Orleans. Before the war the imports at New Orleans of coffee exceeded 425,000 bags, the bags then weighing 160 pounds, and not, as now, 132 pounds, thus showing that more than one-third of the coffee consumed in the United States was at that time marketed in New Orleans. Meanwhile the population of the Mississippi Valley States has increased one-third, and the center of the United States coffee consumption is now further west than it was then.

In considering the export-trade of the United States to Brazil and the other coun-

tries mentioned, it is well to remember that the Northwestern States are the great grain-producing and flour-manufacturing regions.

Their speediest and cheapest route of shipment would appear to be via the Mississippi; and if there existed regular lines of vessels between New Orleans and the countries named they would soon shut out the South American flour-trade of England and the Continent. Brazil alone consumes more than 1,000,000 barrels of flour received from the United States, of which scarcely a barrel is shipped from the port of New Orleans.

Almost the entire flour-trade of that country is monopolized by New York, Baltimore, Richmond, and Great Britain.

The following is a list of the imports from Brazil and the call-ports mentioned, which it is thought might be distributed to the people of the Northwest at less cost to the consumer through the port of New Orleans than through other ports: Coffee, anatta, beeswax, ginger, bamboo, canes, cocoanuts, pimento, hides, lintels, copal, rum, sugar, tortoise-shells, tamarinds, molasses, Brazil-nuts, tatagiba, log-wood, fruits, lance-wood for spars, yasco, mahogany, fustic, ebon-wood, caoutchouc or India-rubber, deer and other skins, cedar, satin-wood, rose-wood, quassia, nutmegs, aniseed-oil, cinnamon, horns and hair, quinquina, dragon's blood, cinchona, silver, gold, emeralds, pearls, diamonds, cassia, turtle-oil, cacao, tonqua-beans, uruca, orchilla, millet, lignumvitæ, cochineal, aloes, spikenard, piassava, carnauba, indigo, canela, licorice-root, arrow-root, castor-oil, nuts, wool, pepper, scammony, cloves, jalap, ipecacuanha, senna, euphorbia, sago, palm and cocoanut oils, ebony-nuts, tumeric, tobacco-leaf, bitumen, sarsaparilla, vanilla, balsam copaiba, dividivi, angostura bark, white mangel, chuquichiqui, tapioca, &c. The greater portion of the articles named would, on their introduction at this port, require transportation by rail.

The following is a list of the articles of Northwestern production required in the commerce with Brazil and the intermediate ports named: Flour, coal, corn-meal, corn, butter, bacon, lard, malts and hops, candles, nails, pork, pine lumber, vinegar, pilot-bread, soap, hams, turpentine, biscuits, rosin, cheese, pitch and tar, barley, crackers, kerosene, brooms and pails, glassware, grease, rye-flour, shingles, staves and hoops, manufactured tobacco, corn-starch, agricultural implements, beef, (15,000 barrels annually,) furniture, bagging for cotton, coffee, and sugar; vegetables, bar-lead and shot, earthenware, machinery, &c. Nearly all the articles named would require river transportation to New Orleans, as being the cheapest.

Perhaps the only articles which cannot be profitably interchanged in the manner indicated are cotton from Brazil, and hardware and clothing from the United States; but all the other articles mentioned are mutually essential to the people residing in the two zones. The advantages of direct trade between the Northwestern States via New Orleans and Brazil are best shown in the matter of flour and coffee. A large portion of the flour exported to Brazil is made in the Northwestern States; so also of the coffee consumed in the United States from Brazil: fully one-third is required by the Northwestern and Mississippi Valley States. The English shipments of flour to Brazil are chiefly to Maranham and the Madeira River. Of the total exports to Brazil, about one-sixteenth consists of kerosene, which is essentially a western production, and which could be most economically moved via the Mississippi River.

Another item of considerable demand in the markets of Cuba, Spanish and South America, is bar-lead, sheet-lead, shot, and leaden tubes. Of these articles Brazil alone imports $2,000,000 annually, and yet not a ton is received in that country from the United States.

The growing importance of the commercial relations of Brazil is shown by the following comparison of ocean tonnage entered at all Brazilian ports in 1863 and 1873:

1863. Number of vessels, 6,391; aggregate tonnage..... 1,594,944
1873. Number of vessels, 28,534; aggregate tonnage..... 8,904,611

The following table, compiled from official Government data for the year 1874, shows the money value of the exports from the United States to the countries named, more than one-half consisting of commodities produced in the Northwestern States, and which might be exported through the port of New Orleans:

Exported to—	Sundries.	Manufactures.	Breadstuffs.	Provisions.
Brazil	$854,674	$1,678,523	$4,633,263	$392,663
Venezuela	237,179	494,308	776,696	347,868
United States of Colombia	1,561,201	1,865,110	371,261	990,973
British Guiana	107,743	344,205	795,276	423,017
Dutch West Indies and Guiana	145,104	211,725	404,198	211,712
British West Indies and Honduras	732,795	1,604,405	3,610,239	1,348,011
Republic of Uruguay	241,723	774,620	33,999	45,027
Argentine Confederacy	1,011,039	1,233,081	1,551	27,291
	4,891,458			

The sundries, $4,891,458, consisted of books, pamphlets, &c.; live animals, ($322,676,) such as horses, mules, horned cattle, sheep, and fowls; railroad cars, &c.; clocks, cacao, spices, &c., brooms and brushes, ($22,377;) copper, manufactured drugs, chemicals, &c., manufactured cotton, fancy articles, fruit in cans, hats, caps, jewelry, hay, hides, and skins manufactured, India rubber, cutlery, lamps, boots and shoes, leather and manufactures of leather, ($44,386,) saddlery, ($56,154,) muskets, &c., lime and cement, marble and stone, pianos, ordnance-stores, paints and painters' colors, paintings and engravings, paper and stationery, perfumery, plated-ware, printing-presses and type, condensed milks, eggs, quicksilver, fish—dried, smoked, and cured; canned meats and oysters, pickles and sauces, scales and balances, salt, garden and other seeds, sewing-machines, molasses, distilled spirits, refined sugar, candy and confectionery, manufactures of tin, trunks, varnish, wax, wearing-apparel, wool, (manufactured,) wine, blacking, watches, &c. (See United States statistical tables, 1874.)

The manufactured articles exported, as shown in the foregoing table, consisted of carriages, carts, &c., cordage and twine, ($296,130,) earthen and stone ware, nails, spikes, glass and glassware; iron—bar, &c., and castings, stoves, lead, lubricating-oils, lard and linseed oils, oil-cake, ($78,761,) vinegar, ice, ($55,098,) masts, spars, &c., hemp, (manufactured,) agricultural implements, ($453,275,) candles and tallow, ($296,130,) steam-engines and machinery, ($749,227;) other iron, manufactured, ($681,634;) rosin, turpentine, tar, &c., ($239,840,) illuminating-oils, ($919,899,) manufactured tobacco, ($784,895,) boards, shingles, &c., ($1,403,679,) staves, shooks, &c., ($492,869,) furniture, ($733,447,) soap and starch, ($279,728.)

Of the breadstuffs, $3,855,229 consisted of flour, $860,867 of corn and corn-meal, $497,898 of bread and biscuit. Of the provisions, the chief items were pork, $896,611, and lard, $1,822,252.

All the data given, both as to exports and imports, were obtained from the official documents of the United States and of the foreign countries named.

Question 11. A statement as to the quantity and value of the principal productions of the State of Louisiana during the year ending 1875, if the data can be readily secured.

Answer. Quantity and value of the principal products of Louisiana, and percentage, exported from the State during the year ending 1875:

Commodity.	Quantity.	Estimated value.	Percentage of commodities exported from the State.
Rice ..... pounds.	39, 930, 720	$1, 796, 882 40	75
Sugar ..... do..	163, 418, 070	12, 100, 000 00	85
Molasses ..... gallons	10, 870, 546	6, 197, 211 22	85
Cotton ..... bales.	425, 000	27, 795, 000 00	100

Above is estimated value of actual production. The sugar, rice, and molasses are crops of 1875–'76; the cotton for year ending September 1, 1875.

Quantity of flour and grain received at New Orleans during the last twenty-five years.

Year.	Flour, barrels.	Grain, bushels†
1850–'54*	4, 143, 240	25, 741, 498
1855–'59*	5, 708, 402	22, 627, 122
1860–'64*	2, 921, 204	22, 45[illegible], 483
1865–'69*	5, 031, 287	27, [illegible]20, 920
1870	1, 641, 477	5, 914, 113
1871	1, 541, 281	4, 537, 539
1872	1, 057, 488	7, 099, 656
1873	1, 502, 206	7, 016, 767
1874‡	937, 685	6, 213, 377
1875	786, 281	4, 252, 850

* Five years' period.
† Sacks and barrels reduced to bushels.
‡ Period at which trade became sensibly affected by railroads from the West tapping interior points.

Average actual monthly ocean freight-rates on flour, wheat, and corn, from New Orleans to New York and to Great Britain, during each month of the year 1875.

Months.	To New York.			To Great Britain.		
	Flour, per barrel.	Wheat, per bushel.	Corn, per bushel.	Flour, per barrel.	Wheat, per bushel.	Corn, per bushel.
				s. d.	*d.*	
January	$0 50	$0 10	$0 10	3 6	10	Corn same as wheat; corn estimated as freight, at 60 pounds per bushel.
February	50	10	10	3 6	10	
March	60	12	12	4 0	9	
April	60	12	12	4 0	9½	
May	60	12	12	4 0	10	
June	60	12	12	4 0	10	
July	50	10	10	3 0	8	
August	50	10	10	3 6	9	
September	50	10	10	3 6	9	
October	60	12	12	4 0	10	
November	1 00	20	20	5 0	13	
December	1 00	20	20	5 0	13	

Total value of commodities of all kinds received at New Orleans from the interior during each of the last ten years:

Year.	Value.
1865–'66	$201,501,005
1866–'67	168,214,325
1867–'68	127,298,499
1868–'69	167,251,234
1869–'70	201,208,428
1870–'71	178,714,020
1871–'72	169,689,113
1872–'73	184,560,935
1873–'74	156,944,488
1874–'75	144,011,209

Quantity of flour and grain shipped from New Orleans to ports of the United States and to foreign ports during the last twenty-five years.

	To ports of the United States.		To foreign countries.	
	Flour.	Grain.	Flour.	Grain.
	Barrels.	*Bushels.*	*Barrels.*	*Bushels.*
1850, five years	1,276,185	5,116,615	1,420,078	4,4e6,790
1855, five years	2,270,851	3,385,907	1,367,500	6,471,902
1860, five years	314,921	1,399,420	133,435	337,760
1865	1,221,018	4,435,217	375,217	1,265,398
1870*	327,444	923,774	228,279	162,746
1871*	356,020	753,544	157,927	594,091
1872*	406,687	1,375,747	78,893	782,416
1873*	416,906	2,597,865	68,867	1,119,070
1874*	299,279	1,757,440	180,354	1,244,499
1875*	247,376	1,160,800	94,876	2,459,986

* Those marked with a * include wheat and corn. No data for wheat for other years.

STATEMENTS BY HENRY G. HESTER, ESQ., IN REGARD TO THE PRODUCTION AND DISTRIBUTION OF COTTON.

Question 12. To what extent is cotton shipped from interior points via New Orleans to ports in the Northern States and in Europe on direct consignment from interior points, and to what extent is such cotton purchased by agents of factories? Please also to state how many years since such transactions commenced, and the facts as to its growth.

Answer. A glance at the table of cotton-receipts at New Orleans will show a marked falling off in the percentage of receipts of the total crop at that port.

Various causes have been assigned for this decrease, the principal of which, however, is the opening up of new channels of trade, developing points which, prior to the war, were comparatively unimportant as cotton-receivers. New railroads have been built

and old ones completed, permeating every section of the cotton-belt, and a strong competition between the various routes of transportation has resulted in a marked curtailment of the shipments of cotton by river and a corresponding increase by rail. In 1855, according to the annual-crop statement of the New York Shipping-List, the overland shipments to eastern delivery-ports direct from producers were only 7,651 bales out of a crop of 2,847,339. Five years later, (1860,) this movement had increased to 108,676 out of a crop of 4,669,770, the largest ever grown. And ten years subsequent to the latter, (1870,) with a crop of 4,347,006 bales, 580,813 were transported overland to delivery ports and to mills north and east of the Ohio and Mississippi Rivers.

Wherever a section is tapped by railroads with through connections it can hardly be said to be entirely tributary to any particular port. In other words, the movement of cotton every year becomes more and more governed by the cost of transportation and contingent charges *en route* from the producer to the consumer. A variation of ¼ to ½ of a cent per pound is sufficient to turn the course of almost the entire shipments of an interior point from their accustomed channels. The movement via Norfolk is an exemplification of these facts. In 1855 the entire quantity of cotton handled at Virginia ports was 31,000 bales, this including amount manufactured in Virginia taken from sea-ports; 1861 it had increased to 78,132, but fell back in 1866, the year subsequent to the war, to 37,531 bales. The repair and extension of the various rail-routes from the interior increased the cotton-movement via Norfolk from 123,627 in 1867 to 505,876 in 1874.

A large part of the cotton shipped via Norfolk, the produce of Tennessee and Arkansas, formerly went to New Orleans by river, besides a considerable portion of that which is now included in the "overland movement."

The following statements compiled from the official data of the cotton exchanges at Memphis and Nashville will show the distribution of cotton from those interior points:

Shipments year ending August 31, 1875.

	From Memphis.	From Nashville, by rail and river.
To New Orleans by rail	33,959	2,103
To New Orleans by river	34,823	.....
To Norfolk by rail	63,120	.....
To Louisville by rail	109,996	.....
To Cairo by rail	24,874	.....
To Cairo by river, To Cincinnati by river, To Cannelton by river, To Pittsburgh by river, To Louisville by river, To Saint Louis by river,	58,495	
Mobile		2,881
Savannah		279
Charleston		4,505
Evansville, for various interior points north and east		6,065
Local spinners, &c		3,437
	325,263	58,504

It will be observed that, of the total movement from Memphis in 1875, 197,990 bales, or 60 per cent., sought the northern seaboard or eastern mills by overland rail-routes, while 58,491 were transported by river to points in the West, from whence all but a small fraction consumed were transported east by rail, as with the 60 per cent. above stated, and leaving but 68,782 shipped to New Orleans.

The receipts at Memphis the same year will furnish an idea of the points from which the cotton shipped through were originally obtained:

Via Memphis and Charleston Railroad	62,895
Via Memphis and Tennessee Railroad	51,883
Via Louisville, Nashville and Great Southern Railroad	33,116
Via Memphis and Little Rock Railroad	30,592
Via Paducah and Memphis Railroad	8,163
From Mississippi River proper	66,107
From White River	12,673
From Saint Francis River	2,789
From Arkansas River	13,991
Wagons and other sources	39,795

We thus find a growing tendency, controlled by a strong competition which has cheapened freights from many interior points by rail, in addition to the desire to escape

the charges of middle-men at delivery-ports or elsewhere, to transport cotton direct from the producer to the consumer.

Not only are the agents of American mills to be found in almost every interior town of importance, a custom which was not established until within a few years back, but buyers also for Great Britain and Europe, whose purchases are shipped on through-bills of lading, avoiding all unnecessary delays, to the final point of destination.

It would be a work of supererogation to follow the ramifications of the staple from the interior of the various Cotton States, the mere statement that nearly one-fourth of the crop finds an outlet to domestic and foreign consumers by overland routes across the Ohio and Mississippi Rivers and through Norfolk, Va., (which is really only a point of transit,) combined with the facts above set forth, being sufficient to furnish a clear conception of the manner in which the American cotton-crop is now marketed.

Production of cotton.

There is a strong tendency to material increase in the southwestern portion of the "belt." The rich bottoms of Mississippi and tributaries averaging in favorable seasons from one-half to one bale, say, of 400 to 450 pounds to the acre, and the fine lands of Texas averaging the best staple, are attracting labor in large numbers from the hill-lands of the more easterly of the Cotton States, where in many places not more than one-third to one-fourth of a bale, or possibly even less, per acre rewards their toils. The result will inevitably be an increase in the annual cotton-production aside from what may be expected through the natural increase of farm-laborers.

Up to within a few years back the system of collecting statistics of the cotton movement of the United States was crude and imperfect. In fact, many of the figures incorporated into the cotton-crop statements prior to the war and for several years subsequent were but approximations. The importance of accurate information respecting a staple which forms so considerable a part in the exportable and manufacturing commodities of the country is now, however, fully appreciated, and a system of information as remarkable as it is comprehensive has, through the medium of mail and telegraph, been brought to a high degree of perfection.

Daily, weekly, or monthly advices are received at all centers directly interested in the movement of the staple, and operations are now more nearly based upon the solid foundation of known facts.

Prior to 1870 the item of yearly consumption in the South was not added in calculations of the crop. More accurate data of the consumption of the United States, including the South, are now obtained, so that the entire growth of each year may be nearly stated.

Annexed table shows the movement of cotton during the last commercial year, 1874–'75, from producers and interior markets direct to the various delivery ports:

Net receipts at ports.

New Orleans	993,482
Galveston	354,927
Mobile	320,822
Charleston	412,931
Savannah	606,727
Wilmington	76,601
Norfolk	387,279
Baltimore	18,512
New York	179,163
Boston	39,885
Philadelphia	39,339
Providence	6,614
City Point	17,306
Richmond, (not counted elsewhere)	15,079
Port Royal	27,912
Indianola	12,754
Other ports, (minor ports not included in net at delivery ports)	358

The above table shows the net receipts at the delivery ports, (with necessary additions and corrections,) as reported to the cotton exchanges from day to day.

These include shipments from minor points along the coast of the Carolinas, Georgia, and Florida, not otherwise counted, as well as the overland movement to eastern delivery ports as shown by the following:

Receipts at New Orleans during year		993,482
Mobile		320,822
Charleston	410,786	
Port Royal	27,912	
Beaufort and Hilton Head, shipped to Savannah	672	
Georgetown and Bull Creek, shipped to New York direct	180	
		439,550

Savannah	576,485	
Brunswick, shipped to New York direct	199	
		576,684
Galveston	354,927	
Indianola	12,754	
Corpus Christi	3	
Brazos Saint Iago	167	
Brownsville	106	
Eagle Pass	288	
		368,245
Florida ports and shipment from interior Florida to Savannah by rail		37,465
Wilmington	76,601	
Shipped from other points on coast North Carolina to New York	13,792	
Baltimore	10,768	
Norfolk	387,279	
City Point	13,306	
Shipped from Richmond via York River Railroad and steamers, and Powhatan line steamers to Baltimore, 4,181; via Clyde line to Philadelphia, and Old Dominion line to New York, 10,898 not counted in net at either of those places	15,079	
		419,664
New York rail, overland	159,034	
Boston rail, overland	39,885	
Philadelphia rail, overland	39,339	
Baltimore rail, overland	7,744	
Providence rail, overland	6,614	
		252,616

In addition to the above, 191,604 bales were transported by the various rail-routes direct to American spinners north and east of the Mississippi and Ohio Rivers, all other cotton from last year's crop being consumed in the South or appearing at the delivery ports above named. The following table is appended to show the course of the overland movement for the year ending August 31, 1875:

Shipped from Saint Louis			128,805
Carried north across Mississippi and Hannibal			8,425
Carried north from Grand Tower and Carbondale			455
Carried north from Cairo via Cairo and Vincennes Railroad			32,717
Carried north from Cairo via Illinois Central Railroad			37,170
Carried north from Evansville via Evansville and Crawfordsville Railroad			9,423
Carried north from Louisville via Ohio and Mississippi Railroad			58,142
Carried north from Louisville via Jefferson, Madison and Indianapolis Railroad			116,721
Carried north from Louisville via Louisville, Cincinnati and Lexington Railroad			21,390
Received at Cincinnati by river			33,225
Shipped to mills adjacent to river and to points above without touching at Cincinnati, exclusive of cottons to Maysville counted in as consumption			10,479
Less:			
Shipments, Saint Louis to Louisville counted at both places		1,047	
Carbondale to Saint Louis, counted at both places		67	
Cario to Saint Louis, counted at both places		975	
Saint Louis to Cincinnati, by river		61	
Memphis, by river		33	
New Orleans, by river		302	
			2,485
Total overland			454,467
Deduct receipts overland at New York, Boston, Providence, Philadelphia, and Baltimore		252,616	
Shipments from Mobile and other out-ports by rail and river to interior	151,358		
Less deducted at New Orleans	130,228		
Less deducted at Savannah	4,362		
Less deducted at Charleston	5,065		
Less deducted at Norfolk	1,456		
	141,111		
		10,247	
			262,863
Leaving direct overland movement not elsewhere counted			191,604

At Saint Louis more than 100,000 of its receipts were over the Iron Mountain Railroad and connections; the cottons crossing at Hannibal were brought over the Missouri, Kansas, and Texas Road and thence distributed to various points in the Northeast. Most of the Cairo cottons were received from Memphis and adjacent points via the Mississippi River and rail, and out of 219,109 bales handled at Louisville 213,497 reached that city over the Louisville, Nashville and Great Southern Railroad.

The following shows the details of shipment from the various points of crossing and destination:

From—	Shipped to—						
	New York.	Boston.	Baltimore.	Philadelphia.	Providence.	Direct to mills.	Total.
Saint Louis	57,313	13,110	2,670	11,846	*2,817	38,843	† 126,599
Hannibal	4,969	2,962	20	123	351	.....	8,425
Cairo	5,371	9,785	169	1,469	1,101	50,500	68,395
Evansville	4,468	241	.....	393	21	4,300	9,423
Louisville	63,984	10,818	1,178	11,982	1,756	89,707	†179,425
Carbondale and Grand Tower	388	.....	.....	.....	.....	.....	388
Cincinnati, &c	22,841	2,969	3,707	13,526	568	8,022	51,333
	159,034	39,885	7,744	39,339	6,614	191,372	443,968
Shipped to points on river not counted above						10,479	10,479
						201,851	454,467
Deduct net overland from southern outports						10,247	.....
Direct overland to mills, &c						191,604	.....

* Not via delivery-ports. † Exclusive of cotton shipped to Cincinnati proper, *i. e.*, not in transit.

By the addition of the receipts at delivery-ports, (3,509,691,) as above stated, to the overland direct to mills (191,604) and southern consumption, taken direct from producers, (126,550,) we have the crop of last year, 3,827,845. The distribution is shown as follows:

Statement of the amount and distribution of the cotton-crops of the United States from 1831 *to* 1875, *in average periods of five years, (the figures in thousands of bales.)*

	1831 to 1835.	1836 to 1840.	1841 to 1845.	1846 to 1850.	1851 to 1855.	1856 to 1860.	1866 to 1870.	1871 to 1875.
PRODUCTION.								
States on the Mississippi—Texas and overland	424	673	874	993	1,377	1,900	1,299	1,939
Alabama, via Mobile	143	295	421	410	508	646	314	329
Florida, via Apalachicola, &c	29	96	141	161	168	154	56	14
Georgia, via Savannah	252	367	246	285	338	400	371	604
South Carolina, via Charleston	194	249	314	341	449	458	192	375
North Carolina and Virginia	69	44	28	21	42	63	188	469
South, taken from plantations	.....	.....	65	74	94	144	88	122
Total crop	1,111	1,624	2,089	2,285	2,976	3,765	2,508	3,852
DISTRIBUTION.								
Export to Great Britain	673	966	1,181	1,180	1,595	1,970	1,234	1,898
Export to France	202	308	347	308	387	464	237	261
Export to other places	41	88	172	229	323	485	206	507
Total export	916	1,362	1,700	1,717	2,305	2,919	1,677	2,666
Consumption of United States	*193	255	390	548	721	826	875	1,183
Total deliveries	1,109	1,617	2,090	2,265	3,026	3,745	2,552	3,849
Stock close of season	56	52	91	163	126	119	95	66

* Northern Virginia only.

Statement showing the sections and countries to which cotton is shipped for manufacture or consumption.

Year ended September—	Number of bales consumed in the United States.			Number of bales exported to foreign countries.			
	Delivered at southern mills and consumed at the South.	Delivered at northern mills and consumed at the North.	Total home consumption.	To Great Britain.	To all other foreign countries.	Total exported.	Total crop.
1854–'55	135,295	541,117	706,412	1,549,716	694,493	2,244,209	2,847,339
1859–'60	185,522	786,521	972,043	2,669,432	1,104,741	3,774,173	4,669,770
1862–'65							*500,000
1865–'66	126,640	604,085	731,725	1,262,271	293,393	1,554,664	2,154,476
1866–'67	156,672	697,367	854,039	1,216,262	340,792	1,557,054	1,951,988
1867–'68	168,348	799,817	968,165	1,228,596	427,220	1,655,816	2,436,893
1868–'69	173,203	821,924	995,127	989,500	458,143	1,447,643	2,260,557
1869–'70	85,265	777,341	862,606	1,475,444	698,115	2,173,559	3,114,592
1870–'71	94,542	1,072,426	1,166,968	2,345,998	788,174	3,134,172	4,347,006
1871–'72	120,000	977,540	1,097,540	1,454,512	502,802	1,957,314	2,974,351
1872–'73	137,662	1,063,465	1,201,127	1,905,566	774,420	2,679,986	3,930,508
1873–'74	128,526	1,177,417	1,305,943	1,867,936	973,045	2,840,981	4,170,388
1874–'75	129,612	1,070,860	1,200,473	1,828,049	846,399	2,674,448	3,827,845

* Estimated.

Exports of cotton during the year 1874–'75.

	Great Britain.	France.	Other foreign.	Total.
New Orleans	566,315	250,622	178,333	995,270
Galveston	203,126	2,496	18,662	224,284
Mobile	91,479	13,010	26,752	131,341
Charleston	173,606	42,334	48,365	264,305
Port Royal	10,675			10,675
Savannah	248,642	36,000	138,593	423,235
Florida			65	65
Wilmington	15,646		1,050	16,696
Norfolk	68,629		3,583	67,212
New York	375,137	15,137	55,115	445,389
Boston	34,398			34,398
Philadelphia	22,262		1,607	23,869
Baltimore	23,134		14,575	37,709
Providence	None	None	None	None.
Portland	None	None	None	None.
San Francisco*		None	None	None.
Total	1,828,043	359,699	486,700	2,674,448

* Exports from San Francisco during year, 157,882 pounds; all foreign production.

Consumption of Europe and America, with the sources of supply in average periods of five years.

	In thousands of bales.									
	1826–'30.	1831–'35.	1836–'40.	1841–'45.	1846–'50.	1851–'55.	1856–'60.	1861–'65.	1866–'70.	1871–'75.
I. CONSUMPTION.										
Great Britain	711	903	1,156	1,368	1,458	1,895	2,265	1,669	2,639	3,191
France	263	278	372	415	355	442	527	440	613	.....
Rest of Europe	148	182	257	314	421	698	963	756	1,229	2,301
United States	114	193	255	375	566	659	810	410	870	1,195
Total	1,236	1,556	2,040	2,472	2,800	3,694	4,565	3,275	5,351	6,687
II. SOURCES OF SUPPLY.										
America	891	1,122	1,528	1,990	2,277	2,949	3,675	1,203	2,593	3,839
Brazil	169	175	142	105	131	149	153	201	614	690
West India, &c	53	39	73	57	30	30	35	73	175	202
East India, &c	77	97	159	198	233	352	540	1,380	1,601	1,484
Egypt, &c	116	123	138	122	129	214	162	418	438	472
Total	1,236	1,556	2,040	2,472	2,800	3,694	4,565	3,275	5,351	1,687

Sources of manufactures of cotton in the United States.

States.	1860. Raw material used.	1870. Raw material used.	1875. Raw material used.
	Pounds.	*Pounds.*	*Pounds.*
Maine	23,733,165	25,887,771	33,603,236
New Hampshire	51,002,324	41,469,719	57,326,126
Vermont	1,447,250	1,235,652	2,372,420
Massachusetts	134,012,759	130,654,040	208,894,352
Rhode Island	41,614,797	44,630,787	61,409,470
Connecticut	31,991,011	31,747,309	45,492,513
Total New England States	283,701,306	275,625,278	409,098,117
New York	23,945,627	24,783,351	28,473,469
Pennsylvania	37,496,203	32,953,318	31,572,305
New Jersey	9,094,649	7,920,035	10,114,300
Delaware	3,403,000	2,587,615	3,358,162
Maryland	12,880,119	12,693,647	21,368,030
District of Columbia	294,117	.....	.....
Total Middle States	87,113,715	80,937,966	94,886,256
Ohio	3,192,500	2,226,400	1,764,000
Indiana	1,813,944	2,070,318	3,261,340
Illinois	95,000	857,000	.....
Iowa	.....	20,000	.....
Utah	12,000	23,500	.....
Missouri	990,000	2,196,600	2,810,485
Kentucky	1,826,000	1,584,625	2,420,382
Total Western States	7,929,444	8,978,443	10,256,187
Virginia	7,544,297	4,925,383	5,560,835
North Carolina	5,540,738	4,238,276	6,694,641
South Carolina	3,978,061	4,756,823	9,671,028
Georgia	13,907,904	10,921,176	23,299,303
Florida	200,000	.....	.....
Alabama	5,246,800	3,249,523	6,756,170
Louisiana	1,995,700	748,525	713,033
Texas	588,000	1,079,118	982,365
Mississipi	638,800	580,764	1,990,800
Arkansas	187,500	66,400	132,400
Tennessee	4,072,710	2,872,582	6,701,718
Total Southern States	43,900,510	32,768,570	62,502,293
Total New England States	283,701,306	275,625,278	409,098,117
Total Middle States	87,113,715	80,937,966	94,886,256
Total Western States	7,929,444	8,978,443	10,256,187
Total Southern States	43,900,510	32,768,570	62,502,293
Total United States	422,644,975	398,310,257	576,742,853

Number of bales of cotton received at Galveston by river and by rail during the last two years.

Year.	Number of bales received.		
	By river.	By rail.	Total.
1874	133, 374	234, 424	367, 79
1875	165, 956	194, 938	360, 89

Number of bales of cotton received at Mobile by river and by rail during the last twenty years.

Year.	Number of bales received.		Year.	Number of bales received.	
	By river.	By rail.		By river.	By rail.
1850			1869	115, 158	111, 58
1855	436, 343	None.	1870	147, 881	155, 97
1860	575, 555	227, 706	1871	177, 512	223, 05
1865			1872	90, 251	195, 71
1866	282, 633	130, 554	1873	76, 436	153, 68
1867	136, 334	94, 195	1874	76, 906	219, 97
1868	187, 092	166, 211	1875	97, 077	222, 18

Differences between above and official figures, per Table L, consist of corrections, city crops, &c.

Total all-rail movement of cotton to northern sea-ports and to northern mills direct.

Year.	Number of bales of cotton shipped by rail.		Total movement by rail.
	To northern sea-ports.	To northern mills direct.	
1850			
1855	7, 284	None.	7, 284
1860	108, 676	None.	108, 676
1865*			
1866	211, 885	None.	211, 885
1867	185, 712	None.	185, 712
1868	204, 337	170, 523	374, 860
1869			
1870	196, 591	153, 825	350, 416
1871	336, 996	228, 923	565, 919
1872	220, 121	122, 065	342, 186
1873	260, 796	141, 500	402, 296
1874	259, 511	237, 572	497, 083
1875	252, 616	191, 604	444, 220
1876	390, 295	305, 327	695, 622

* No record from 1862 to 1865.

Figures of direct shipment to mills are from New York Financial Chronicle.

Number of bales of cotton received at northern factories by rail direct and through northern sea-ports during the last twenty years.

Year ending September 1—	Received at northern mills.		Total.
	By rail direct.*	Through northern sea-ports.	
1855	None	571, 117	571, 117
1860	None	786, 521	786, 521
1865†	.....	.....	.....
1866	.....	604, 085	604, 085
1867	.....	697, 367	697, 367
1868	170, 523	629, 294	799, 817
1869	258, 611	563, 313	821, 924
1870	153, 825	623, 516	777, 324
1871	228, 923	843, 503	1, 072, 426
1872	122, 065	855, 475	977, 540
1873	141, 500	921, 965	1, 063, 465
1874	237, 572	939, 845	1, 177, 417
1875	191, 604‡	879, 256	1, 070, 860

* Rail figures from New York Financial Chronicle to 1874.
† No record from 1862 to 1865.
‡ From official crop statement National Cotton Exchange; totals of New York Shipping List to 1871 inclusive.

Number of bales of cotton shipped from New Orleans to northern ports and from New Orleans direct to foreign countries.

Year ending September 1--	Shipped to northern ports.	Shipped direct to foreign ports.	Total.
1850	213, 843	624, 748	838, 591
1855	202, 317	1, 067, 947	1, 270, 264
1860	208, 637	2, 005, 662	2, 214, 296
1865*	.....	.....	.....
1866	252, 355	516, 188	768, 543
1867	248, 376	618, 940	867, 316
1868	100, 215	581, 477	681, 692
1869	222, 871	619, 534	842, 405
1870	179, 520	1, 005, 530	1, 185, 050
1871	238, 824	1, 302, 535	1, 541, 359
1872	198, 477	888, 976	1, 087, 453
1873	228, 968	1, 177, 058	1, 406, 526
1874	201, 079	1, 147, 314	1, 348, 393
1875	162, 454	995, 270	1, 157, 724

* No record.

This table, if desired, can be enlarged by giving similar details of the other southern ports, as per inclosure marked XX.

Table showing sources of receipts at New Orleans, (exclusive of cotton received from other delivery-ports.)

From—	1874–'75.	1873–'74.	1872–'73.
Red River	146, 435	170, 852	187, 743
Ouachita River	70, 072	102, 827	103, 679
Arkansas River	22, 136	45, 936	58, 128
Jackson Railroad	243, 302	280, 436	271, 537
Mississippi River and other sources	511, 437	621, 647	619, 297
Total	993, 382	1, 221, 698	1, 240, 384

Actual average monthly ocean freight-rates on cotton from New Orleans to New York and to Great Britain, during each month of the year 1875.

Months.	Average monthly rate.		
	To New York, per pound.	To Great Britain, per pound.	
		Sail.	Steam.
	Cents.	*d.* *d.*	*d.* *d.*
January	$\frac{1}{2}$	$\frac{15}{32}$ to $\frac{1}{2}$	$\frac{17}{32}$ to $\frac{9}{16}$
February	$\frac{1}{2}$	$\frac{31}{64}$ to $\frac{1}{2}$	$\frac{1}{2}$ to $\frac{11}{16}$
March	$\frac{1}{2}$ to $\frac{5}{8}$	$\frac{7}{16}$	$\frac{15}{32}$ to $\frac{1}{2}$
April	$\frac{5}{8}$	$\frac{25}{64}$ to $\frac{9}{16}$	$\frac{7}{16}$
May	$\frac{5}{8}$	$\frac{17}{32}$ to $\frac{9}{16}$	$\frac{1}{2}$ to $\frac{33}{64}$
June	$\frac{5}{8}$	$\frac{15}{32}$ to $\frac{1}{2}$	$\frac{15}{32}$ to $\frac{1}{2}$
July	$\frac{5}{8}$	$\frac{8}{16}$ to $\frac{13}{32}$	$\frac{1}{2}$
August	$\frac{5}{8}$	$\frac{8}{16}$	$\frac{13}{32}$ to $\frac{7}{16}$
September	$\frac{1}{2}$ to $\frac{5}{8}$	$\frac{1}{2}$	$\frac{9}{16}$ to $\frac{19}{32}$
October	$\frac{5}{8}$	$\frac{32}{64}$ to $\frac{8}{16}$	$\frac{17}{32}$ to $\frac{33}{64}$
November	$\frac{5}{8}$	$\frac{8}{16}$	$\frac{1}{2}$
December	$\frac{5}{8}$ to $\frac{7}{8}$	$\frac{8}{16}$	$\frac{17}{64}$ to $\frac{9}{16}$

Statistics of manufactures of cotton in the United States.

States.	1860.		1870.		1875.	
	Number of mills.	Number of spindles.	Number of mills.	Number of spindles.	Number of mills.	Number of spindles.
Maine	19	281,056	23	459,772	27	633,944
New Hampshire	47	636,788	36	749,843	36	805,709
Vermont	8	17,600	8	28,768	10	46,344
Massachusetts	217	1,673,498	191	2,116,521	206	3,775,634
Rhode Island	153	814,554	139	1,043,242	129	1,438,479
Connecticut	129	435,406	111	597,142	108	889,784
Total New England States	573	3,858,902	508	4,995,288	516	7,599,894
New York	79	348,584	81	492,573	60	615,205
Pennsylvania	185	476,979	138	434,246	60	451,900
New Jersey	44	123,548	27	200,580	22	178,928
Delaware	11	38,974	6	29,534	8	48,276
Maryland	20	51,835	22	89,112	20	127,352
District of Columbia	1	2,560	.....	.....	.....	.....
Total Middle States	340	1,042,480	274	1,246,045	170	1,421,661
Ohio	8	19,664	7	23,240	4	13,000
Indiana	2	11,000	4	11,736	4	.....
Illinois	3	.....	5	1,856	.....	.....
Iowa	.....	.....	1	.....	.....	.....
Utah	1	70	3	1,020	.....	.....
Missouri	2	5,000	3	16,715	3	19,700
Kentucky	6	8,192	5	3,596	3	9,514
Total Western States	22	43,926	28	58,093	14	65,202
Virginia	16	49,440	11	77,116	9	54,624
North Carolina	39	41,884	33	39,897	31	54,500
South Carolina	17	30,890	12	34,940	18	70,228
Georgia	33	85,186	34	87,602	47	131,340
Florida	1	1,600	.....	.....	.....	.....
Alabama	14	35,740	13	28,056	14	58,480
Louisiana	2	6,725	4	13,082	3	2,200

Statistics of manufactures of cotton in the United States—Continued.

States.	1860.		1870.		1875.	
	Number of mills.	Number of spindles.	Number of mills.	Number of spindles.	Number of mills.	Number of spindles.
Texas	1	2,700	4	8,878	2	5,700
Mississippi	4	6,344	5	3,526	9	18,256
Arkansas	2	.....	2	1,125	2	1,781
Tennessee	30	28,850	28	27,923	40	55,384
Total Southern States	159	290,359	146	322,145	175	452,607
Total New England States	573	3,858,902	508	4,995,288	516	7,599,894
Total Middle States	340	1,042,480	274	1,246,045	170	1,421,661
Total Western States	22	43,926	28	58,093	14	65,202
Total Southern States	159	290,359	146	322,145	175	452,607
Total United States	1,094	5,235,667	956	6,621,571	875	9,539,364

APPENDIX No. 15.

ANSWERS TO INQUIRIES IN RELATION TO THE COMMERCE OF MINNESOTA, AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT STATE BY RIVER, BY LAKE, AND BY RAIL, BY MR. C. F. SOLBERG, OF SAINT PAUL, MINN. 1876.

Question 1. A statement as to the quantity and value of each of the principal products of Minnesota during the year 1874; also, so far as can be stated, the percentage of each general class of commodities exported from the State. (See blank A.) In the preparation of this table, please to take the average value of the various commodities in Minnesota.

Answer. Accompanying Table A gives the information that it has been possible to gather on the subjects named. The only public documents containing statistics relating to the same are the reports of the State commissioner of statistics, showing the quantity of each product raised in the State, acreage in each county, and population; the reports of the auditor of the State showing the number of live animals of each class and their assessed value; the reports of the surveyors-general of logs and lumber, showing logs cut, and partly logs exported, and lumber manufactured, and the reports of the railroad commissioner showing rail-shipments by stations.

Many of the tables in the railroad commissioners' reports were, upon examination, found to be so inaccurate and seemingly edited with such a lack of care that no reliance could be placed on any of them; hence no use has been made of them in the compilation of this table.

Special statements of shipments by rail have been obtained by the compiler for the purpose, regarding flour and wheat from all the roads, regarding other products and lumber from some of the roads, and estimates based on other information made for the remaining roads. The Chamber of Commerce of Saint Paul have for some years collected no statistics of importance. The same may be said of the Minneapolis Board of Trade; and in Winona, where the "Republican" newspaper published a report annually while the Winona and Saint Paul Railway was managed from that city, nothing has been published since the beginning of 1874, when the management of the Winona road was transferred to the general offices of the Chicago and Northwestern Railway, in Chicago.

Thus the only public reports relating to manufactures and commerce at my disposal were the partial statements of the surveyors-general of logs and lumber, and the labor involved in obtaining figures for an export statement for this table, as well as for grain and flour exports in 1875, has been very great.

The agricultural product-quantities in this table are from the Commissioner of Statistics' report, and may be accepted as quite correct, the agricultural statistics having been gathered and compiled with great care.

Market reports from various points have been consulted in estimating the value in Minnesota.

The number of each class of live animals is from the State auditor's report, and that officer has been consulted as to the difference between the real and assessed value.

The log statement is from the surveyors-general's reports, adding for logs cut on the line of the Lake Superior and Mississippi Railroad, not included in their statements. The quantity of manufactured lumber has been obtained from lumbermen, and is comparatively accurate.

In the Mississippi lumber-district, the largest of the two, 1,000 feet, log-measure, yield 10 per cent. more of manufactured lumber; 1,000 feet logs make 8,000 shingles. These facts and a knowledge of the log-stock, logs exported, and logs left at end of season, are sufficient to test the accuracy of a statement of lumber manufactured.

For the Mississippi district the totals of lumber-statements exceed by about 10,000,000 feet the quantity of lumber obtainable (at the rate of 1,000 feet lumber per 1,000 feet logs) from the logs shown to have been saved; for the Saint Croix district the log and lumber statements correspond, the discrepancy thus being only 10,000,000 feet for the two districts.

Estimates had to be made for logs sawed at Red Wing and Winona, which, if slightly over or under the actual quantity, will not materially affect the total for the State

The logs exported were all from the Saint Croix district, and, of course, by river. No accurate statements of manufactured-lumber shipments could be obtained from lumbermen, and as they alone could tell how much was shipped by river, an estimate was made, as follows:

	M feet.
Carried by railroads into the State, (for most of the roads a known quantity).	132,471
Of this, carried into Iowa	30,000
	102,471
Consumed in Saint Paul, Minneapolis, and in river towns below	70,000
Sawed and consumed on Northern Pacific Railroad	5,000
Total consumed in the State	177,471
Balance assumed to have been exported	162,335
Total manufactured	339,806

The amount consumed in the cities above named is an estimate based on information from lumbermen. No account is here taken of the products of the numerous smaller mills on the streams below the pine regions of the State, whose manufacture of cottonwood, oak, butternut, walnut, and other lumber is almost wholly for farmers and not for the lumber market.

A.—*Quantity and value of each of the principal products of Minnesota during the year* 1874.

Commodity.	Quantity.	Estimated value.	Per cent. exported from the State.
Grain:			
Wheat ..... bushels..	23,938,172	$20,000,000	As wheat, 12,675,000 bushels, or 52.9 per cent.
Corn ..... do....	7,340,342	4,500,000	Shipments important. We import considerable corn and some oats.
Rye ..... do....	58,100	40,000	
Oats ..... do ..	10,967,172	5,375,000	
Barley ..... do....	614,545	675,000	312,970 bushels, or 50.9 per cent.
Buckwheat ..... do...	27,623	27,000	None known.
Flour ..... barrels..	2,240,000	11,200,000	1,665,000 barrels, or 74.3 per cent.
Beans ..... do	15,797	27,000	Shipments unimportant.
Potatoes ..... do....	2,383,107	1,400,000	Some potatoes south by river.
Hay ..... tons..	1,145,077	6,922,866	
Live animals:			
Horses ..... number..	155,641	14,000,000	Unable to ascertain, but comparatively small. We import horses and incidentally cattle.
Cattle ..... do....	443,003	10,500,000	
Sheep ..... do....	159,069	400,000	
Hogs ..... do....	153,944	1,077,608	
Butter ..... pounds..	10,916,942	1,700,000	Per cent. small. Unable to ascertain.
Cheese ..... do....	1,090,238	170,000	None.
Other products of animals	.....	.....	Unable to ascertain per cent. of pork. Quantity considerable.
Lumber:			
Logs ..... M feet..	442,137	4,642,438	As logs, 65,369 M feet, or 14.8 per cent.
Boards ..... do....	339,806	4,587,388	162,335 M feet, or 47.7 per cent.
Shingles ..... M..	247,165	617,912	
Lath ..... M..	70,017	105,025	
Estimated M feet and value of all timber and lumber shipped out of the State.	.....	.....	The two above items aggregate 227,704 M feet, valued at $2,878,191. Unable to ascertain other lumber and timber shipments from the State.
Estimated value of all other products, agricultural.	.....	788,000	None of importance.
Total	.....	88,755,237	Value of above exports, $22,126,766.

Question 2. Number and tonnage of steamboats and barges which arrived at Saint Paul each year from 1860 to 1875 inclusive. (See blank B.)

Answer:

B.—*Table showing number of arrivals, &c., at Saint Paul, Minn.*

[From the report of the Commissioner of Statistics.]

Year.	Opening of the river above Lake Pepin.	Closing of the river above Lake Pepin.	Arrival of first boat from below Lake Pepin.	Departure from Saint Paul of last boat.	Number of arrivals.	Length of season through Lake Pepin.
1844	.....	.....	.....	.....	41	231
1845	.....	.....	.....	.....	48	234
1846	.....	.....	.....	.....	24	245
1847	.....	.....	.....	.....	47	236
1848	.....	.....	.....	.....	63	241
1849	.....	.....	.....	.....	95	252
1850	.....	.....	.....	.....	104	229
1851	.....	.....	.....	.....	119	218
1852	.....	.....	.....	.....	171	216
1853	.....	.....	.....	.....	200	233
1854	.....	.....	.....	.....	256	238
1855	Apr. 9	Nov. 20	Apr. 17	Nov. 19	560	217
1856	Apr. 7	.....	Apr. 18	Nov. 10	857	212
1857	Mar. 20	Nov. 20	May 1	Nov. 14	1,025	238
1858	Mar. 20	Dec. 3	Mar. 25	Nov. 16	1,068	236
1859	Mar. 25	Dec. 1	Apr. 20	Nov. 29	806	223
1860	Mar. 15	Nov. 23	Mar. 28	Nov. 23	775	240
1861	Apr. 2	Nov. 26	Apr. 8	Nov. 25	937	231
1862	Mar. 29	Nov. 15	Apr. 18	Nov. 15	1,015	211
1863	Mar. 29	Nov. 24	Apr. 6	Nov. 24	743	233
1864	Mar. 29	Nov. 11	Apr. 14	Nov. 11	631	211
1865	Apr. 2	Dec. 5	Apr. 15	Dec. 1	829	231
1866	Apr. 12	Dec. 9	Apr. 19	Nov. 23	777	219
1867	Apr. 15	Dec. 2	Apr. 21	Nov. 29	883	222
1868	Mar. 25	Dec. 8	Apr. 4	Dec. 1	835	248
1869	Apr. 8	Dec. 4	Apr. 19	Nov. 20	792	216
1870	Apr. 7	Dec. 10	Apr. 10	Oct. 6	760	240
1871	Mar. 27	Dec. 5	Apr. 10	Nov. 19	553	247
1872	Apr. 8	Nov. 19	Apr. 23	Nov. 15	346	206
1873	Apr. 3	.....	Apr. 17	Nov. 12	.....	209
1874	Apr. 23	Nov. 28	Apr. 23	Nov. 16	218	219

Question 3. Is grain purchased in Minnesota to any extent for direct shipment to foreign countries on through bills, and by what routes is it chiefly exported?

Answer. Not to any extent. The shipments of that class ascertained amount to only 8,500 barrels of flour by the Grand Trunk and the Erie and North Shore fast-freight lines.

Question 4. Please to designate on a plain township map, by means of blue lines, limit of surplus wheat produced, and with red lines the limit of surplus corn produced, so far as that may be possible.

Answer. The limit of surplus wheat culture has been marked with blue lines on accompanying township map. In all of the northern counties the surplus is small, but the last product returns showed a surplus in each, and it will increase from year to year.

As to corn culture, there is no surplus. Some of the older counties raise more than consumed at home, but most of it, even in those counties, finds a ready market in neighboring towns, and probably more is imported from Iowa than the quantity leaving the sections of the State where produced.

Question 5. Please to mention any prorating arrangements between rail and water lines on through consignments which have come to your notice, mentioning how many miles of water are assumed as the equivalent of one mile of railroad.

Answer. No prorating on the principle mentioned. Via Du Luth the rates east are supposed to be governed by and to be the same, or about the same, as the rates via Milwaukee and Chicago, lake lines deeming it worth about 10 cents more per barrel of flour or an equal weight in grain to carry this class of freight from Du Luth than from Milwaukee or Chicago and the Du Luth Railroad consequently having to carry the same to Du Luth for about 10 cents less than the rail rate at the same time from here to Milwaukee or Chicago. On the Mississippi the steamer lines run in connection with the railroads, and the Saint Paul agent of the Keokuk Northern Packet Company states the through rates, river and rail, from Saint Paul to Chicago, of that company to be divided as follows:

	Miles.
From Saint Paul to La Crosse, by river, distance	200
From La Crosse to Chicago, by rail, distance	200

Miles.

Railroad receives ½ of through rate; river receives ½ of through rate.
From Saint Paul to Dunleith, by river, distance 321
From Dunleith to Chicago, by rail, distance 135
Railroad receives $\frac{6}{10}$ of through rate; river receives $\frac{4}{10}$ of through rate.

The Milwaukee and Saint Paul and the Chicago and Northwestern Railroads both state that they have no prorating arrangements with lines east for goods from Minnesota to points east of Milwaukee and Chicago.

Three miles of water are supposed to be equivalent to one mile of rail, but as stated no such rule is applied here.

Question 6. Please to mention the principal grain markets of Minnesota in the order of magnitude, and, if possible, the receipts and shipments of grain at each point, by rail and by river during the year 1875.

Answer. Accompanying table gives all points shipping each not less than 100,000 bushels of wheat, including flour calculated as wheat at five bushels per barrel; other grains being unimportant, are not given.

"Receipts," in railroad language, mean receipts by rail, and some of our roads keep no classified account of such by stations. A receipt-statement would be valuable if a statement of wheat on hand from the preceding year was added to it, but no such statement being obtainable and no receipt-statement from a large number of the most important points, the receipts have been omitted for all.

For the sake of convenience, the shipping points have been arranged in the order of location as well as in the order of magnitude.

The shipments are all for the calendar year 1875, except as to points on the Winona and Saint Peter Railway, these being for the railway year from April 1, 1875, to April 1, 1876.

C.—*Shipping points for wheat in the order of magnitude.*

Shipping point.	Wheat, (including flour.)	Shipping point.	Wheat, (including flour.)
	Bushels.		*Bushels.*
Minneapolis	4,018,132	Janesville	188,494
Saint Paul	2,501,078	Austin	188,112
Red Wing	1,607,366	Atwater	188,076
Rochester	976,511	Wykoff	181,742
Stillwater	912,148	New Ulm	181,405
Lake City	747,312	Kellogg	177,533
Winona	672,286	Isinour's	177,130
Faribault	607,093	Houston	176,399
Northfield	556,561	Saint Peter	174,925
Hastings	532,729	Worthington	171,920
Lanesborough	508,355	Alden	156,094
Minnesota City	500,579	Le Roy	154,585
Albert Lea	455,885	Utica	152,113
Waseca	418,886	Farmington	147,874
Dover	413,169	Weaver	147,147
Mankato	407,703	Glencoe	146,311
Saint Charles	383,285	Sleepy Eye Lake	145,561
Kasson	382,738	Newport	140,067
Owatonna	363,101	Shakopee	139,919
Willmar	361,612	Swede Grove	134,190
Spring Valley	356,020	Chester	133,350
Rushford	342,095	Kirkhoven	129,993
Minneiska	337,634	Marshall	127,162
Dodge Centre	333,481	Dundas	126,155
Melrose	323,455	Byron	122,971
Wells	316,427	Medford	115,645
Benson	306,522	Whalan	115,271
Eyota	277,937	Mapleton	115,050
Jordan	272,187	Madelia	112,332
Fountain	250,635	Wabasha	109,068
Blooming Prairie	248,044	Rosemount	106,252
Carver	243,751	Brownsdale	105,464
Brownsville	230,000	Winnebago City	105,344
Lake Crystal	207,914	East Henderson	105,110
Hokah	207,149	Minnesota Lake	104,036
Grand Meadow	206,890	Claremont	103,122
Litchfield	205,253	Chaska	102,635
Saint Joe	201,915	Saint Cloud	102,267

Question 7. A statement showing, as accurately as possible, the quantity of grain shipped from Minnesota during the year 1874 or 1875; first, by lake and rail via Du-Luth; second, by lake and rail via ports on Lake Michigan; third, by all rail to the East; fourth, by river to South; and, fifth, by all rail South.

Answer. The accompanying tables give such information on the subject as I have been able to gather, shipments being for 1875:

Statement showing shipments from Minnesota, in 1875, (1) *according to the eighth inquiry of schedule.*

	Flour.	Wheat.
	Barrels.	*Bushels.*
By lake and rail via Duluth	274, 130	1, 859, 408
By lake and rail via Lake Michigan ports	1, 484, 990	9, 643, 298
By all rail to the East, (see next page)	.....	.....
By river to the South	9, 148	204, 969
By all rail to the South*	Scarcely	any.

(2) *Detailed statement of all shipments from the State in* 1875.

By Chicago, Dubuque and Minnesota Railroad, eastward	3, 695	100, 174
By Southern Minnesota Railroad, eastward	246, 795	2, 838, 684
By Winona and Saint Paul Railway, to Chicago†	292, 359	3, 337, 481
By Winona and Saint Paul Railway, to Milwaukee†	7, 900	878, 187
By Winona and Saint Paul Railway to interior Wisconsin and Illinois†	5, 000	500, 000
By Green Bay and Minnesota Railroad, eastward	1, 426	7, 531
By Chicago, Milwaukee and Saint Paul Railway, eastward	774, 136	2, 272, 368
By West Wisconsin Railway, eastward	228, 679	188, 875
Total by rail	1, 489, 990	10, 143, 298
By river, eastward‡	113, 080	1, 751, 585
By river, south	9, 148	204, 969
By Duluth and lakes	274, 130	1, 859, 408
Total flour and grain shipped from the State	1, 886, 348	13, 959, 260

* Understood to mean all rail routes on west side of the Mississippi.
† So separated by the general freight agent.
‡ Eastward shipments by river are those transferred to railroads, after getting out of Minnesota, for shipments eastward.
NOTE.—The all-rail shipments East are increasing from year to year.

The following is a statement of all-rail shipments obtained from five of the seven northwestern agents of fast-freight lines having offices in Saint Paul and Minneapolis, showing the shipments in 1875 through their own offices and those reported to them by their local agents throughout the State; other shipments not reported to the foregoing agencies having been made by shippers in all parts of the State through the Chicago general agencies direct:

	Flour, barrels.	Wheat, bushels.
To the interior of New England or of other Atlantic States	71, 700	110, 000
To Atlantic sea-ports	259, 458	102, 000
To foreign countries on through bills*	3, 000	.....
Total	334, 158	212, 000

The foregoing comprise shipments via the Erie and North Shore line, the Grand Trunk line, the Blue line, the Great Western Dispatch, and the Diamond line. The lines failing to give any information are the Empire and the Red line (one northwestern agency) and the Pennsylvania Railroad line. Both of these are understood to carry large quantities of flour and wheat out of the State, and their statements if given would probably have added two-thirds to the above figures.

The grain taken out of the State by the Keokuk northern line of steamers from Hastings is not included in the river statement, which is complete for all other points, and, I think, reasonably accurate.

From each of the railroads taking flour and grain out of Minnesota full statements have been obtained, making a reliable total of rail-shipments.

Duluth shipments are from elevator records. Statements regarding all-rail shipments direct to the East, &c., are incomplete. When preparing to collect materials for this report, I ascertained that no separate railway-account is kept of Minnesota grain reaching Milwaukee and Chicago as to destination beyond these points, and that the

* By the Erie and North Shore line. The Grand Trunk reported 5,500 barrels of flour shipped to foreign countries on through bills via Duluth. On foregoing page the all-rail shipments are included in those "via Lake Michigan ports."

nearest approach to the total Minnesota lake and rail shipments, via Michigan ports, would be the difference between the total of eastward shipments from the State and the total of fast-freight line shipments.

Applying at the general railway and fast-freight line offices for figures, I was told by the former that all commodity statistics had been discontinued, and at the latter that the railroad offices were the proper places to get fast-freight figures; the fast freight being local railroad freight until it reached Chicago. Persistent efforts finally enabled me to procure the required railroad statements, and a similar proceeding with the Minnesota fast-freight line chief agents resulted in obtaining the fragmentary statements included in the table.

Question 8. A statement giving the yearly receipts and shipments of grain at Duluth from 1865 to 1875, inclusive.

Answer. The accompanying table gives shipments of flour and wheat for all years during which shipments were made. No important shipments of other grains than wheat.

Quantity of flour and grain shipped from Duluth each year from 1865 to 1875, inclusive.

Year.	Flour.	Wheat.	Corn.	Rye.	Oats.	Barley.	Buckwheat.
	Barrels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1865*							
1866*							
1867*							
1868*							
1869*							
1870†	28,357	46,851					
1871	164,114	1,435,254					
1872	122,557	730,216					
1873	150,023	2,232,376					
1874	300,205	1,552,925					
1875	274,130	1,859,408					

* Nothing; railroad to Duluth opened in 1870. † From August 1, 1870, to close of navigation.

NOTE.—None earlier than the above; other grains only small shipments coastwise.

Question 9. A table showing the estimated quantity of wheat produced in Minnesota during the last fifteen years, in connection with statistics as to the quantity of flour produced in Minnesota during the same period, the object of this information being to ascertain if the business of manufacturing flour in Minnesota has or has not increased as rapidly as the production of wheat. (See table inclosed.)

Answer. Aside from the United States census returns of 1860 and 1870, no flour statistics, excepting those for 1874 and 1875, compiled for this report.

Table showing the quantity of wheat produced in Minnesota during the last sixteen years and flour produced in the years shown.

Year.	Wheat, bushels.	Flour, barrels.
1859	2,186,993	
1860	5,101,432	254,702
1861–1864*		
1865	9,475,000	
1866	7,921,442	
1867	10,014,828	
1868	15,382,022	
1869	16,587,621	
1870	15,372,941	1,296,488
1871	13,467,300	
1872	22,059,375	
1873	26,402,485	
1874	23,938,172	2,240,000
1875	31,475,000	2,500,000

* No statistics collected in these years.

NOTE.—The wheat crop of any one year begins to reach the mills about the 1st of September of the same year. Therefore a year's flour manufacture is largely from the preceding year's crop. The wheat figures for 1859 and flour figures for 1860 are from the United States census of 1860, (census year from June 1, 1859, to June 1, 1860.) The flour figures for 1870 are those of the United States census and for that census year.

The following table gives wheat and flour only for the years 1860, 1870, 1874, 1875. The wheat crop of 1875 was not good for milling purposes, the wheat having been greatly injured by wet during the harvest season, which probably lessened the quantity of flour manufactured from it. As will be seen, the manufacture in 1875, being for the calendar year, includes only the last four months' run on the crop of 1875, the wheat manufactured until September being of the small crop of 1874. Nevertheless, the manufacture of flour has doubled since 1870 in a little more than five years, and has more than kept pace with the production of wheat.

Question 10. What benefits have already been realized from the improvement of the Mississippi River below Saint Paul?

Answer. Steamboat-captains state in a general way that while before the building of the wing-dam at Pig's Eye that place was the worst on the river, so that even when, at a low stage of water, boats could go up to Pig's Eye they could go no farther; while now there is nothing to hinder boats from reaching Saint Paul when at a low stage of water they are able to reach Pig's Eye. No comparison can be made as to the stage of water required to reach Saint Paul now and before the building of the draw, because before the improvement the stage of water at Pig's Eye was the limit. Now the difficulty is below. Obstructions in the river at three or four places between Prescott and Pig's Eye prevent Saint Louis boats from going to Saint Paul when the water is low, and at the present writing (August 17) boats stop at Prescott, and their freight and passengers for Saint Paul are transferred to smaller boats. Improvements at the bad places mentioned similar to those at Pig's Eye would clear the river.

Question 11. Please to state the year when railway communication was opened from Saint Paul to Chicago, to Milwaukee, and to Duluth.

Answer. To Chicago and Milwaukee by the Iowa and Minnesota Division, of the Chicago, Milwaukee and Saint Paul Railway in 1867, and by the River Division of the same road in 1871; by the West Wisconsin Railway in 1873; to Duluth in 1870.

Question 12. Of the total amount of grain shipped out of Minnesota on roads running south during 1874 or 1875, about what proportion do you estimate was afterward shipped eastward on roads running to the ports on Lake Michigan, or direct to the Atlantic seaboard?

Answer. The roads running south that shipped grain out of Minnesota in 1875 were also roads running to Lake Michigan, namely, the Iowa and Minnesota and the River Divisions of the Chicago, Milwaukee and Saint Paul Railway, and the Chicago, Dubuque and Minnesota, the latter terminating at Dubuque but having Chicago connections, and all grain taken out by them went to the ports on Lake Michigan, or at least to or via Chicago and Milwaukee.

Question 13. Please to describe the various railway lines of Minnesota to the East and to the South.

Answer. Of the roads terminating at Saint Paul and Minneapolis, the principal railroad centers of the State, the following are lines to the East:

The Saint Paul and Pacific, main and branch lines, operated under the charter of the old Minnesota and Pacific Company. The branch line, the oldest railroad in the State, runs from Saint Paul up the east side of the Mississippi River to Sauk Rapids, in Benton County, 76 miles. Opened from Saint Paul to Saint Anthony (10 miles) in 1862; completed to Sauk Rapids in 1867.

From Saint Cloud, in Stearns County, (on west side of river, below Sauk Rapids,) runs the line of the projected land-grant branch, through the counties of Stearns, Todd, Douglas, Otter Tail, and continuing northward parallel with the Red River to Saint Vincent at the northwestern corner of the State, completed in disconnected sections; from Saint Cloud to Melrose, in Stearns County, 35 miles, the only completed section regularly operated. The main line runs from Saint Anthony westward through the counties of Hennepin, Wright, Meeker, Kandiyohi, Swift, Stevens, Grant, and Wilkin, to Breckenridge, on the Red River. Distance: 207 miles from Saint Anthony, 217 miles from Saint Paul.

Of the wheat shipped from stations on the main and branch lines during the year 1875, (1,866,383 bushels on the main and 441,156 on the branch, a total of 2,307,539 bushels,) 1,837,357 bushels went to the mills at Minneapolis, and 288,876 to Saint Paul.

The lumber products of the mills at Anoka, some 16,000,000 feet per year or more, are brought to Saint Paul by the branch line, and about an equal amount of lumber is taken out of Minneapolis by the main line for distribution at points west. Main line completed to Breckenridge in 1871.

The Lake Superior and Mississippi Railroad, running from Saint Paul northward through the counties of Ramsey, Washington, Chisago, Pine, Carlton, and Saint Louis, to Duluth. Distance, 154 miles; completed in 1870. Virtually a branch of this road, and operated by it, is the Stillwater and Saint Paul Railroad from Stillwater on the Saint Croix River to White Bear Station on the Lake Superior and Mississippi Road, distance 13 miles, giving Stillwater direct connection with Duluth. Completed in 1870.

The wheat shipped by river for Duluth is received at Stillwater, and goes thence by rail via White Bear. Minneapolis, also, has direct connection with Duluth by the Min-

neapolis and Duluth Railroad, running from Minneapolis up to White Bear Station. Distance, 13 miles. Completed 1871. Nearly all the flour shipped to Duluth comes by this road from Minneapolis via White Bear. The Minneapolis and Duluth Railroad is, with regard to ownership and management, a part of the Minneapolis and Saint Louis Railway, regarding which see below.

Of the lumber carried in 1875 by the Lake Superior and Mississippi Railroad (about 21,000,000 feet, being nearly all from mills on the line of the road,) about 16,000,000 feet went to Saint Paul. The Lake Superior and Mississippi Railroad runs through a sparsely-settled forest-country, with no tillable lands north of Chisago County; hence the business of the road, aside from lumber and pinery supplies, is principally between Duluth and the southern termini.

The Saint Paul, Stillwater and Taylor's Falls Railroad, a road running eastward and northward from Saint Paul to Stillwater. Continuation projected from Stillwater up the Saint Croix Valley to Taylor's Falls. Distance from Saint Paul to Stillwater, 17 miles. Completed to Stillwater in 1872.

A branch from Stillwater Junction to Hudson, on the Wisconsin side of the Saint Croix River, connects this road with the West Wisconsin Railway, and by an arrangement with the Saint Paul, Stillwater and Taylor's Falls Railroad, the West Wisconsin is enabled to run through passenger and freight trains from Saint Paul via Hudson, to Milwaukee and Chicago, making this road a direct line to the East.

Considerable quantities of the products carried to Saint Paul for shipment east, from the country tributary to the Saint Paul and Pacific and the Saint Paul and Sioux City Railroad, are taken out of the State by the West Wisconsin Railway.

Distance from Saint Paul to Hudson, 18 miles. Communication with Milwaukee and Chicago by this route began in 1873.

The Chicago, Milwaukee and Saint Paul Railway, two of whose three divisions terminate at Saint Paul, via the Iowa and Minnesota Division, the Minnesota part of which was originally chartered as the Minneapolis and Cedar Valley, one of the old land-grant roads—name afterward changed to the Minnesota Central, and, after its purchase by the Chicago, Milwaukee and Saint Paul, made a part of the Iowa and Minnesota Division—runs from Saint Paul and from Minneapolis southward through the counties of Ramsey, Hennepin, Dakota, (Saint Paul and Minneapolis terminal branches uniting at Mendota,) Rice, Steele, Dodge, Mower, branching at Austin and leaving the State at Le Roy and at Lyle. The line from Austin south via Le Roy is the road to McGregor and Prairie du Chien on the Mississippi, and, further through Wisconsin, to Milwaukee and Chicago.

The line from Austin south via Lyle connects with the Central of Iowa, giving us rail connection west of the Mississippi with Saint Louis and other southern points. As yet, however, the Minnesota traffic south by this line with the country tributary to this line and its connections is light. No through trains are run to Saint Louis, and but very little grain or flour shipped this way to Saint Louis. Lumber is carried into Iowa and corn brought up from Iowa.

Connecting points with other roads in Minnesota: At Farmington, in Dakota County, with the Hastings and Dakota Division; at Owatonna, in Steele County, with the Winona and Saint Peter; at Ramsey, (north of Austin,) in Mower County, with the Southern Minnesota. Length of road in Minnesota, 137 miles. Communication opened with Milwaukee and Chicago by this route in 1867.

The River Division, originally included in the lines to be built by the old Minnesota and Pacific Company, and the original charter therefore the same as that of the Saint Paul and Pacific lines. Name afterward changed to the Saint Paul and Chicago Railway and made a separate enterprise. Bought by the Chicago, Milwaukee and Saint Paul and made its River Division. Runs from Minneapolis (using the track via Minnesota) to Saint Paul, and thence down the east side of the Mississippi through Ramsey and Washington Counties to a point opposite Hastings, where it crosses the river and continues down the west side through the counties of Dakota, Goodhue, Wabasha, and Winona to La Crescent, in Houston County, nearly opposite La Crosse, Wis. Distance from Saint Paul to La Crescent, 128 miles.

Connections with other roads: At Hastings with the Hastings and Dakota; at Winona with the Winona and Saint Peter west, and the Chicago and Northwestern and Green Bay and Minnesota east; at La Crescent and points immediately below with the Chicago, Dubuque and Minnesota, the Southern Minnesota, and with La Crosse, Wis. Completed to La Crescent in 1872. Communication by this route (trains to and from the east crossing the river at Winona and using the cut-off on the Wisconsin side) with Milwaukee and Chicago began in 1871.

Flour and grain shipments from stations over the two foregoing divisions in 1875:

	I. & M. D.	R. D.
Flour, barrels	284,302	489,834
Oats, bushels	87,043	19,966
Barley, bushels	52,842	51,720

	I. & M. D.	R. D.
Wheat, bushels	1,483,872	1,788,494
Corn, bushels	41,629	5,075
Rye, bushels		1,103

All but a few hundred barrels of the flour on the Iowa and Minnesota Division came from the merchant mills at Northfield, Dundas, Faribault, Medford, Aurora, and Austin. Of the flour on the River Division 3?3,918 barrels came from Minneapolis, 57,800 barrels from Red Wing, and 18,802 barrels from Hastings; the flour nearly all for Milwaukee and Chicago. Of the wheat a little more than 1,000,000 bushels went to the Minneapolis mills, the balance to Milwaukee and Chicago.

The foregoing are the lines to the east terminating at Saint Paul and Minneapolis. South of these cities are the following east lines:

The Hastings and Dakota Division of the Chicago, Milwaukee and Saint Paul Railway, running from Hastings westward through the counties of Dakota, Scott, and Carver to Glencoe, in McLeod County. Distance, 75 miles. Of flour shipments from stations in 1875—total, 23,516 barrels—21,914 barrels were from Shakopee, bound for eastern markets. Of 249,744 bushels of wheat carried in 1875, 178,151 bushels were transferred at Chaska to the Minneapolis and Saint Louis Railway for shipment to Minneapolis.

The Hastings and Dakota Road is projected to the western border of the State. Section to Glencoe completed in 1872.

The Winona and Saint Peter Railway is owned and operated by the Chicago and Northwestern. It runs westward from Winona, through the counties of Winona, Olmstead, Dodge, Steele, Waseca, Blue Earth, Le Seuer, Nicollet, Brown, Redwood, Lyon, Lincoln, and Yellow Medicine, continuing into Dakota Territory to Lake Kampeska. The Winona and Saint Peter is one of the old land-grant roads, originally known as the Transit. Distance from Winona to the western State line, 288 miles; to Lake Kampeska, 326¼ miles. Considerable lumber is carried west on this road, a part of which comes from Wisconsin pineries; the balance from the Saint Croix and Upper Mississippi. Total of flour carried in 1875, 237,746 barrels, and of wheat, 5,047,593 bushels, of which 222,359 barrels flour and 3,337,481 bushels wheat were carried by the road to Chicago, 878,187 bushels wheat and 7,900 barrels flour were carried to Milwaukee, and 831,925 bushels wheat and 7,487 barrels flour to interior points on the road, more than one-half of the latter being to interior points in Wisconsin and Illinois. Completed in 1873.

The Southern Minnesota Railroad, running from Grand Crossing, opposite La Crosse, Wis., westward through the counties of Houston, Fillmore, Mower, Freeborn, Faribault, to Winnebago City, in the last-named county. Projected to the western border of the State. Distance from Grand Crossing to Winnebago City, 167¼ miles. Completed to Winnebago City in 1870. Principal classes of west-bound freight—merchandise and lumber, the latter mainly from Wisconsin. About three-fifths of all freight is east-bound, the bulk of it being flour and grain for shipment out of the State. In 1875, there were taken from this road 246,795 barrels of flour, 2,858,684 bushels wheat, nearly all going by rail through Wisconsin.

The Chicago, Dubuque and Minnesota Railroad, an Iowa road, running from Dubuque up the west side of the Mississippi, and in 1872 extended into Minnesota to La Crescent, in Houston County. Distance from State line to La Crescent, 23 miles; from Dubuque to La Crescent, 117 miles. Shipments from Minnesota all from Chicago and other eastern points.

Shipments out of Minnesota, in 1875: 100,174 bushels wheat, 3,695 barrels flour, 2,325 bushels oats, 11,348 bushels corn, 6,317 bushels barley.

The four last named are the lines to the east terminating south of Saint Paul and Minneapolis. The number of east lines will be completed by mentioning the Northern Pacific Railroad running from Duluth westward through the counties of Saint Louis, Carlton, Aitkin, Crow Wing, Cass, Todd, Wadena, Otter Tail, Becker, Clay, to Moorhead, on the Red River, and continuing thence westward through Dakota Territory; Fargo, opposite Moorhead, being the easternmost point in Dakota. Track of Lake Superior and Mississippi Railroad used from Duluth to Northern Pacific Junction, 21 miles. Distance from Duluth to Fargo, 253 miles; from Northern Pacific Junction to Fargo, 229 miles. The country traversed by this road is as yet but sparsely settled, and shipments, excepting forest products and merchandise from Duluth, mainly from the counties of Clay, Becker, and Otter Tail. Open to Moorhead in 1871.

All lines whose traffic with other States is mainly with States east having been classed as lines to the East, only three roads are to be classed as lines to the South, namely: The Saint Paul and Sioux City and the Sioux City and Saint Paul Railroads being one continuous line under the management of two separate corporations, whose principal officers, however, are the same men. Using the same track out of Saint Paul to Mendota as the Chicago, Milwaukee and Saint Paul Railway, it runs southward up the east side of the Minnesota River to the south bend near Mankato, and thence southwest through the counties of Blue Earth, Watonwan, Cottonwood, Jackson, Nobles, and further through Iowa to Sioux City. Distance from Saint Paul to Saint

James, in Watonwan County, (terminus of Saint Paul and Sioux City part of road,) 121 miles; from Saint James to Sioux City, (Sioux City and Saint Paul part,) 149 miles; whole length, 270 miles. Grain and flour shipments nearly all northward. Of 2,062,300 bushels wheat carried northward, in 1875, 881,434 bushels were shipments from stations in Iowa, 548,843 bushels of it were transferred at Merriam to the Minneapolis and Saint Louis Road for Minneapolis, 77,522 barrels of flour were carried, in 1875, northward, nearly all from stations in Minnesota, and 54,083 barrels of it from the mills at Jordan, in Scott County. Shakopee, county-seat of Scott, and an important milling point, is a station on this road, but its flour goes by Hastings and Dakota Division.

Movements of other grains: Oats, carried north, 101,349 bushels, one-third of it from Iowa; corn, carried north, 37,998 bushels, six-sevenths of it from Iowa; barley, carried north, 25,095 bushels, mostly from this State; flax-seed, carried north, 45,809 bushels, four-fifths from Iowa. Road completed, in 1870, to Saint James, and, in 1872, to Sioux City.

The Minneapolis and Saint Louis Railway, running southward from Minneapolis, west of the Minnesota River, to a point near Carver, in Carver County, where it crosses the river and connects with the Saint Paul and Sioux City Railroad at Merriam. It is as yet the only road west of the Minnesota River pursuing a southerly direction. Projected through the counties of Scott, Le Seuer, Waseca, Freeborn, to a connecting point with the Central of Iowa at the southern boundary line.

Completed, from Minneapolis to Merriam, 27 miles, in 1871. 1,311,910 bushels wheat carried by this road in 1875, all or nearly all for Minneapolis; 209,045 bushels of it came from Stillwater, via White Bear, over the Minneapolis and Duluth, (described in connection with the Lake Superior and Mississippi Railroad,) and 726,994 bushels were transferred to the Minneapolis and Saint Louis Road by the Saint Paul and Sioux City and Hastings and Dakota Division, as stated above. The balance, 375,871 bushels, were original shipments from Hennepin and Carver Counties.

The Central Railroad of Minnesota, originally chartered as the Minnesota and Northwestern, (name changed,) runs from Mankato southward through Blue Earth and Faribault Counties to Wells, a station in Faribault County on the Southern Minnesota Railroad. Distance, 40 miles. Projected southward to the State line, and northward, via Glencoe, in McLeod County, to Saint Cloud, in Stearns. Completed in 1874. Carried in 1875, 289,531 bushels wheat from stations located between the terminal points, of which 118,685 bushels went to Mankato and 170,846 bushels to Wells; carries oats and other grain to Mankato from all other stations.

Question 14. What classes of goods are received in Minnesota chiefly from Saint Louis and New Orleans? In the same connection please to state about what proportion of the sugar and molasses consumed in Minnesota, is received from Saint Louis and New Orleans, and what proportion from the East.

A few articles, such as rosin, pitch, castor-oil, white lead, and possibly lard-oil and wooden ware came chiefly from those places. The quantity of sugar and molasses from Saint Louis and New Orleans is so small compared with the imports of the same class of goods from the East, that it would be difficult to determine the proportion in the absence of actual statistics.

Notwithstanding the rapidly growing importance of railroads as carriers of our exports and imports, the Saint Louis trade is still largely by river, and growing less in proportion to the whole business of the State as it grows in population.

Question 15. Of the total general merchandise received at Saint Paul, Minneapolis, and Winona, and other important centers of trade, of the commerce of which you can conveniently gain information, about what proportion, do you estimate, comes from Saint Louis and New Orleans and what proportion from Chicago or Milwaukee, or direct from Atlantic States or Atlantic sea-ports?

Answer. As to Saint Louis and New Orleans see answer to the previous inquiry. As to the other points, information adequate or sufficiently accurate to state the proportion in figures not obtainable. As to all classes of goods that may be bought in eastern cities, the merchants in the three cities named are more and more getting into the habit of making purchases east of Milwaukee and Chicago, believing that thereby they will obtain goods at lower rates, and getting at the same time the opportunity to make an eastern trip, as many of them consider it, without expense to themselves.

Question 16. Which of the railroads of Minnesota are considered exempt from the power of State regulations, under the rule of law in the Dartmouth College case, and in the charter of which roads has the State retained the power of regulating freights and fares?

Answer. Answered in first part of report. When the tariff law of 1871 had taken effect, the Saint Paul and Pacific, and the Iowa and Minnesota Division of the Chicago, Milwaukee and Saint Paul Railway claimed the exclusive right to regulate freights and fares by virtue of express grant in original charter, and the latter road (in the annual report to the railroad commissioners) claimed the same right for the other two divisions by simply referring to answer made in Iowa and Minnesota Division report. But this

feature of the question regarding the State's right to regulate railroads has not been publicly discussed. In another form the question as to the State's right to regulate is now before the United States Supreme Court, (see decisions in railroad commissioners' third annual report, of which copy has been furnished the Treasury Department, with first part of report.)

Question 17. Is the through business from Minnesota to the cities of the Atlantic seaboard chiefly carried on in fast-freight line cars of roads east of Chicago, or in cars belonging to roads west of Chicago?

Answer. Chiefly on fast-freight lines of roads east of Chicago.

Question 18. Please to present such illustrations as may occur to you, going to show the manner in which, and the extent to which the freight-rates actually charged on Mississippi River and on the lakes regulate rail rates.

Answer. No illustrations except the difference in the rates during the season of navigation and in winter, which is not caused wholly by the existence of water-lines.

While these undeniably tend to the lowering of rates, the frequent reductions made by rival railway lines east of Chicago cause such a confusion in the question of rates that our most experienced shippers are unable to give an opinion as to the extent to which lake rates govern rail rates.

Question 19. Please to present a statement, in such form as you may deem proper, concerning any facts of importance relative to discriminating or differential freight charges, the complaints as to such practices in Minnesota, and the ground upon which the railroads defend their practices of this kind.

Please also state some of the evils which have resulted to the public generally or to particular localities from discriminations made by railroad companies in their freight charges.

Answer. When the popular hostility to the railroads culminated in 1874, in the passage of a legislative act creating a board of railroad commissioners, with quasi-judicial powers, and authority to regulate freights and fares, the formerly frequent complaints regarding discrimination against localities and persons ceased, and the *next winter the board was legislated out of office* and a new law enacted scarcely equaling the shadow of the old one; *no complaints have since been heard.* As to discriminating charges and complaints thereof previous to 1874, reference is made to the report of the joint railroad investigating committee of 1871, and to the railroad commissioners' report for 1873, page 411, copies of which accompanied the first part of this report.

The injurious practices complained of were: First, lower charges for a distance to a point where the discriminating road was brought into competition with other roads, or with another road, than for a part of the same distance, placing the intermediate points at a disadvantage; second, unreasonable charges for a short distance to another road, leading to a better market, in order to compel the shipper to send his freight to market by the discriminating road; third, unreasonable charges at non-competing points, to make up for the loss at competing points; fourth, lower rates to certain favored wheat-buyers, enabling such to control the local market; fifth, permitting railroad officials to trade in grain, with facilities for shipping superior to those afforded other shippers. The roads defended their discriminating charges against certain points and in favor of others by declaring that competition compelled them to lower rates where lowered in order to get the business, and that the rates charged from complaining points were not disproportionate to the cost of carrying the freight obtained from such points; as to favored shippers, that the arrangement was supposed to be to the advantage of farmers, or the circumstances frequently justify a departure from the tariffs in favor of large single shipments or shippers.

The evils were such as would naturally result from the classes of discrimination complained of, and are too plain to need elucidation.

Question 20. What proportion of the total value of the surplus products of Minnesota do you estimate to have been shipped to States east, and what proportion to States south, during the year 1874 or 1875? The statistics of the latest year of which you have reliable data may be assumed.

Answer. The total value of exported wheat, barley, flour, and lumber in 1875 was $22,126,766. No exact information as to shipments south, except of lumber and wheat and flour by river. Assuming that all the lumber went south, (though some of it went to Illinois,) the value of surplus products shipped to States south (lumber, wheat, and flour) would be $3,096,104, or not quite 14 per cent. of the foregoing $22,126,766, leaving 86 per cent. as the proportion shipped to States east.

No information on which to base an estimate of proportion of shipment of minor products east or south.

Question 21. Is there now or has there ever been any law of Minnesota prescribing the limit of any particular charge for the transportation of either freight or passengers, or for preventing a greater charge for a less than for a greater distance?

Answer. The tariff law of 1871 limited charges. The railroad-commissioner law of 1874 gave the power to establish rates into the hands of the board of commissioners, and especially prohibited a greater charge for a less than for a greater distance. The

latter law was repealed in 1875. The new law of that year, still in force, does not prescribe or authorize the prescribing of limits to railroad charges; it provides penalties for the violation of its provisions, one of which forbids "unreasonable charges," and if such are construed to include "a greater charge for a less than for a greater distance," then also the present law may indirectly be called a "law for preventing a greater charge for a less than for a greater distance."

Question 22. Of the total amount of grain shipped south from Minnesota on the Mississippi River, about what proportion was transferred to railroads and transported to the ports on Lake Michigan, or direct to the Atlantic seaboard?

Answer. The wheat and flour shipped down the river from the State in 1875 amounted to 2,567,694 bushels, (including flour at 5 bushels per barrel,) of which 2,316,985 bushels, or 90.2 per cent., were transferred to railroads for further shipment eastward.

Question 23. Please to give the rail and river rates for the transport of grain from Winona and from Saint Paul to Saint Louis during the year 1875.

Answer. As to rail grain rates from Saint Paul and Winona to Saint Louis, (via line west of the Mississippi,) the Chicago, Milwaukee and Saint Paul Railway has a through tariff, of which no copy obtained; but hardly any grain shipped by that route to Saint Louis from Minnesota. River rates to Saint Louis from Winona and Saint Paul, 25 cents per 100 pounds.

Rail-rates for grain from Winona to Milwaukee and Chicago, stated by the general freight agent of Chicago and Northwestern Railway to have been 27 cents per 100 pounds throughout the year over his road.

By the Chicago, Milwaukee and Saint Paul Railway: 25 cents per 100 pounds from April to September; 27 cents from September to end of year, (see accompanying special tariffs.) From Saint Paul: 25 cents from April to September, 30 cents from September, (see same tariffs.) Rail and lake and rail rates to New York and to Montreal: no through rail rates affecting the charge for distance from Minnesota to Milwaukee or Chicago; endless fluctuations in charge for distance from Chicago eastward.

One of the fast-freight-line agents gave me the rates from Chicago to New York, varying from 30 to 40 cents per 100 pounds between March 25 and October 1, 1875. Winter rates higher.

No information regarding rates to Montreal.

Unable to get lake and rail rates to New York via Milwaukee or Chicago. However, as to the Chicago and Northwestern Railway, the general freight agent has stated that for all grain from Minnesota going east of Chicago or Milwaukee his road received the full rates to Chicago or Milwaukee; thus the lake and rail rates east by that road must have been the 27 cents per 100 pounds to the lake—the lake and rail rates thence to point of destination.

As to rail rates from Winona to Du Luth, the general freight agent of the Lake Superior and Mississippi Railroad informed me that he offered to carry grain from Winona to Du Luth last year for the price charged from Winona to Milwaukee and Chicago, but received no freight.

Through-freight tariff to Saint Louis of Keokuk Northern Line Packet Company forwarded herewith. Copy of Chicago, Milwaukee and Saint Paul through tariff not obtained. Was told that there is no through tariff to New Orleans.

Copy inclosed of fast-freight Red Line tariff between Chicago at the East, all the lines having, I believe, the same tariff rates. Adding rates to Chicago gives through rates. Copies of local tariff inclosed.

The following should have been included under grain rail rates to Milwaukee and Chicago:

Statement of rates in 1875 furnished by general freight agent of West Wisconsin Railway:

In the year 1875.	Grain.	Flour.
November 25 to March 18	30 cents per 100 pounds.	60 cents per barrel.
March 18 to June 15	25 cents per 100 pounds.	50 cents per barrel.
June 15 to June 28	20 cents per 100 pounds.	40 cents per barrel.
June 28 to September 1	20 cents per 100 pounds.	35 cents per barrel.
September 1 to November 22	25 cents per 100 pounds.	50 cents per barrel.

The West Wisconsin rates being all from Saint Paul (not from Winona) to Chicago or Milwaukee.

All foregoing rates are general or special tariff rates. The departures from them in individual cases are, however, so frequent and great, that the tariff rates give no correct information as to the actual cost of transportation to the shippers during the periods of great activity in the through business

During the spring of the present year, 1876, competition between fast-freight lines caused great reduction in rates; so much, that one of the agents stated that his line had carried freight for nothing; meaning, of course, that the proportion chargeable to the distance from Chicago to the East of the rates received was next to nothing, and yet the tariff showed ordinary rates.

E.—*Quantity of grain of each kind produced in Minnesota*, 1860 to 1875.

Year.	Wheat.	Corn.	Rye.	Oats.	Barley.	Buckwheat.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1859	2, 166, 993	2, 941, 952	121, 411	2, 176, 000	109, 668	29, 052
1860	5, 104, 432	3, 143, 577	286, 125	2, 912, 857	301, 539	56, 220
1861 to 1864 *						
1865	9, 475, 000					
1866	7, 921, 449	2, 058, 747		4, 372, 477		
1867	10, 014, 828	3, 216, 010		5, 620, 855	316, 715	
1868	15, 382, 029	4, 849, 936	52, 100	7, 831, 523	518, 500	25, 292
1869	16, 587, 621	1, 194, 965	72, 281	9, 785, 959	851, 113	46, 038
1870	15, 372, 941	5, 650, 370	73, 375	9, 895, 164	1, 518, 686	63, 369
1871	13, 467, 300	7, 076, 268	130, 928	10, 689, 484	1, 627, 007	54, 152
1872	22, 059, 375	7, 142, 245	182, 730	12, 550, 733	1, 495, 494	49, 359
1873	26, 402, 485	6, 457, 368	96, 877	12, 544, 536	66, 945	22, 445
1874	23, 938, 172	7, 340, 342	58, 100	10, 967, 072	614, 545	27, 623
1875	31, 475, 000	9, 506, 000	70, 000	15, 775, 000	1, 585, 000	31, 500

* No statistics collected in Minnesota.

The figures for 1859 are those of the United States census of 1860. Those for 1860 from report State commissioner of statistics of that year. Those for 1865, 1866, 1867, from report of State auditor, to whom returns for the three years named were made. For 1865 they were very poor; wherefore all omitted except wheat. For same reasons rye, barley, and buckwheat, omitted for 1866, and rye and buckwheat for 1867. Those for 1864–1875 from reports of State commissioner of statistics, which office was re-established in 1869.

APPENDIX No. 16.

ANSWER TO INQUIRIES IN RELATION TO THE COMMERCE OF LOUISVILLE AND THE COMMERCIAL MOVEMENTS TO AND FROM THAT CITY BY RIVER AND BY RAIL, BY MR. C. H. POPE, OF LOUISVILLE, KY., 1876.

Question 1. Please to present comparative statistics as to freight rates from Louisville to three or four principal points in the Southern States, by river and rail, during the year 1875, indicating the relative rates by river and rail during high and low water. Points suggested: Nashville, Memphis, Vicksburgh, and New Orleans.

Answer:

SCHEDULE 5.—*Statement showing the average river and rail rates for the transport of merchandise of the same class from Louisville to the competitive points in the Southern States during each month of the year* 1875, *together with the average stage of water.*

RATES FROM LOUISVILLE PER 100 POUNDS.

Months.	To Nashville.								To Memphis.							
	Rail.				River.				Rail.				River.			
	Class—				Class—				Class—				Class—			
	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
January and February	40	35	30	15	25	20	....	15	60	50	40	25	25	20	15	12½
March and April	40	35	30	15	25	20	....	15	60	50	40	20	25	20	15	12½
May	40	35	30	15	....	....	....	....	60	50	40	20	....	....	....	....
June to August	40	35	30	15	25	20	....	15	60	50	40	20	25	20	15	12½
September and October	40	35	30	15	....	....	....	....	60	50	40	20	....	....	....	....
November	40	35	30	15	25	20	....	15	60	50	40	25	25	20	15	12½
December	40	35	30	15	25	20	....	15	60	50	40	20	25	20	15	12½

Months.	To Vicksburgh.								To New Orleans.							
	Rail.				River.				Rail.				River.			
	Class—				Class—				Class—				Class—			
	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
January to April	100	75	65	35	50	40	30	20	100	75	65	35	50	40	30	20
May	100	75	65	35	....	....	....	....	100	75	65	35	....	....	....	....
June to August	100	75	65	35	50	40	30	20	100	75	65	35	50	40	30	20
September and October	100	75	65	35	....	....	....	....	100	75	65	35	....	....	....	....
November	100	75	65	40	50	40	30	20	100	75	65	40	50	40	30	20
December	100	75	65	40	50	40	30	20	100	75	65	35	50	40	30	20

The above rail rates are taken from the tariffs of the Louisville and Nashville and Great Southern Railroad and connections.

The Elizabethtown and Paducah Railroad, or the Louisville, Paducah and Southwestern Railroad, as it is now called, duplicated the rates given by the Louisville and Nashville and Great Southern Railroad above, as both roads are monopolies, and have combined on tariffs to competitive points.

The river rates for low water during the latter parts of January and May and throughout the months of September and October were merely nominal, as boats could not take freight at any price. A few light boats ran, but their high rates, with

the insurance and extreme uncertainty as to time of delivery, caused them to do absolutely nothing at competitive points.

In low water, when the boats do anything, their rule is to double or treble their rates, or otherwise to be governed by the necessities of the case. For example, freights which at high water range from 12½ to 20 cents would at low water be placed at 40 or 50 cents.

The classification of river freight is extremely irregular to competitive points.

First class would include manufactured tobacco, furniture, and bulky articles of that nature.

Second class—dry goods, groceries, hollow castings, &c.

Third class. Very little river freight is taken under this head.

Fourth class—bacon, lard, bagging, iron, tobacco, (by the hogshead,) &c.

Whisky, flour, pork, &c., are taken at so much per barrel; plows by the piece. In the table I have reduced the rail and river tariffs, so far as possible, to a common classification, that the desired comparison may be made.

Table showing depth of water in the Louisville and Portland Canal (at its head) during the year 1875.

Month.	Fifth day.	Fifteenth day.	Twenty-fifth day.
	Ft. in.	*Ft. in.*	*Ft. in.*
January	12 2	6 4	4 6
February	9 7	6 3	8 6
March	15 6	12 0	12 0
April	11 9	9 3	8 4
May	9 4	8 1	6 7
June	6 8	6 9	7 10
July	7 8	11 3	14 10
August	25 0	9 0	7 1
September	4 10	3 5	3 6
October	3 10	4 5	4 10
November	3 8	8 4	8 3
December	9 8	10 6	9 6

Above taken from the daily records made by B. Durett, corner Fourth and Water streets.

The stage of water during the past year has been a remarkably good one. The water in the Indiana chute, which is the shallowest part of the channel in the rapids opposite the city, is two feet lower than the canal level.

Our ordinary river-steamers draw from 5 to 7½ feet; 8 feet of water in the chute is considered a good stage. There are some light flat-boats and small crafts, however, that can run in 3 feet of water.

Question 2. A statement showing the total tonnage shipped south and received from the South by river during the last ten or fifteen years. (Mr. Fink will present the facts as to tonnage by rail.)

Answer. There is no record kept of the freight received and shipped by river except upon the shipping-books of the various steamers. Our board of trade, at its most flourishing stage, did not separate the river from the rail items either in exports or imports.

I send herewith all of the published reports of the board, and inclose also two tables (see Exhibit B,) showing the imports and exports of the city from 1865 to 1873. These schedules I have compiled from the published and unpublished documents of the board, and they contain all the statistical information which exists upon the subject.

The imports and exports over the Louisville and Nashville Railroad are very perfectly exhibited in the annual reports of that company, and they are the most perfect set of statistics for the ground which they touch upon in the whole city. I inclose copies of all these reports that I have been able to obtain, viz, for 1866–'67, 1867–'68, 1869–'70, and 1874–'75. I have also compiled two tables (see Exhibit C) showing the imports and exports over the Louisville and Nashville Railroad from 1866 to 1875.

Any information of a similar nature to that set forth in these railroad reports forwarded for years other than they represent, can be obtained by consulting the official copies kept on file with the secretary of the road at this point.

Question 3. Please to present statistics showing the receipts of cotton at Louisville each year during the last ten or fifteen years, and also the statistics of shipments of cotton from Louisville to points north and east of Louisville.

Schedule 3. Number of bales of cotton received at Louisville by river and rail from 1850 to 1875.

Answer. As the information upon this head has been collated from various sources, each incomplete, I present tables showing the total information, and leave to the department such classification of this knowledge as will best subserve its requirements.

TABLE 1.—*Showing the total imports and exports of cotton, taken from board of trade reports.*

Date.	Imports.	Exports.
From March 31, 1865, to April 1, 1866	56, 898	34, 461
From March 31, 1866, to April 1, 1867	79, 162	77, 399
From March 31, 1867, to April 1, 1868	156, 602	158, 945
From March 31, 1868, to April 1, 1869	136, 958	137, 592
From March 31, 1869, to April 1, 1870	151, 635	150, 407
From March 31, 1870, to August 31, 1870	58, 656	57, 749
From August 31, 1870, to September 1, 1871	322, 551	318, 964
From August 31, 1871, to September 1, 1872	201, 734	201, 345
From August 31, 1872, to September 1, 1873	233, 152	232, 583

TABLE 2.—*Showing the total imports and exports of cotton by months from September, 1870, to November, 1873, inclusive.*

Months.	Imported.	Exported.	Months.	Imported.	Exported.
1870.			March	17, 492	17, 503
September	6, 410	6, 635	April	16, 767	15, 904
October	27, 526	26, 194	May	5, 781	5, 488
November	40, 880	41, 394	June	8, 892	8, 542
December	47, 154	45, 924	July	2, 535	2, 405
1871.			August	1, 305	1, 466
January	48, 569	54, 490	September	4, 364	3, 789
February	58, 351	47, 910	October	23, 825	21, 087
March	36, 394	34, 950	November	29, 765	29, 207
April	22, 868	25, 290	December	32, 192	28, 827
May	14, 881	16, 266	1873.		
June	8, 244	8, 429	January	29, 961	36, 256
July	6, 392	6, 677	February	21, 473	23, 668
August	4, 952	4, 805	March	22, 032	21, 106
September	3, 522	3, 430	April	24, 939	24, 623
October	26, 869	26, 444	May	12, 725	12, 350
November	28, 160	29, 928	June	12, 776	13, 456
December	33, 759	34, 958	July	9, 482	10, 297
1872.			August	8, 618	8, 617
January	31, 290	29, 855	September	8, 070	7, 759
February	25, 432	25, 422	October	15, 417	16, 311
			November*	35, 967	36, 392

* The records of the board of trade stop at this point.

TABLE 3.—*Showing amounts of cotton received over the Louisville and Nashville Railroad, July 1, 1866, to January 30, 1875.*

1866–'67	71, 808
1867–'68	130, 194
1868–'69	144, 389
1869–'70	164, 577
1870–'71	295, 990
1871–'72	207, 492
1872–'73	222, 720
1873–'74	286, 946
1874–'75	214, 442

REMARKS.—There is no cotton shipped from this point over the Louisville and Nashville Railroad. Of the exports over that road for nine years (Exhibit C) we find but 16 bales.

TABLE 4.—*From the reports of the National Cotton Exchange showing overland movement.*

Year—	Shipped from Louisville north and east by railroad.			
	Ohio and Mississippi.	Jefferson, Madison and Indianapolis.	Louisville, Cincinnati and Lexington.	Total.
Ending September 1, 1874				
Ending September 1, 1875	67, 944	110, 733	21, 189	199, 866
September 1, 1875, to February 29, 1876	45, 998	116, 227	29, 051	191, 276

An inspection of tables 1 and 4 shows that the first board of trade year, the cotton exchange year, and the Louisville and Nashville Railroad year end in different months. Most of the cotton moving through Louisville, so moves from September to April.

The movements for July and August are comparatively small and very nearly uniform, so that, for the purposes of comparison, we may, without serious error, take the railroad year and the cotton exchange year as ending at the same time.

An approximation to the river receipts up to 1873 might be obtained by subtracting the Louisville and Nashville Railroad receipts from the totals for the various years. Or, so far as table 2 extends, the board of trade years may be reduced to the railroad standard.

At present our river receipts and shipments are very small, and will about counterbalance each other. From our cotton factors I learn that the total receipts by river of cotton for 1875 were only about 1,000 bales. They shipped about this amount by river to Cincinnati and the East.

The National Cotton Exchange mentions in its reports "amount of cotton received at Cincinnati by river." Should not this amount be included in the general cotton movement through Louisville, as it all passes and stops at this point, and some of it is transferred here? This transfer, however, would be included under the railroad shipments.

The receipts at Cincinnati by river, as mentioned in the National Cotton Exchange report from September 1, 1875, to February 29, 1875, were 34,086 bales.

Question 4. Please to define on a cheap map the area of the surplus tobacco-producing region west of the Alleghany Mountains, by means of a blue line, and the limits of the section from which tobacco is shipped to Louisville by means of a red line, and also present such statistics as you have at command showing the increase of the tobacco-crop of the West during the last fifteen or twenty years.

Answer. The area of the surplus tobacco-producing region west of the Alleghany Mountains includes, as I understand it, the area of the tobacco-producing region whose product is not shipped to Louisville. Referring to the section of country inclosed in the black line on the map, (see reference-book, page 25,) which represents this area, it will be seen to include Southern Missouri and Northeastern Arkansas. Of these sections, as well as of West Virginia, and those portions of Kentucky and Tennessee composed between the Blue Ridge and Alleghany Mountains, it may be well to remark that they are but sparsely settled, and tobacco is grown only in limited quantities for home consumption and not as a commercial product. As they are, however, producing-regions, it has been thought best to include them.

Illinois, Indiana, Ohio, and Eastern Kentucky are all tobacco-producing regions, though the same attention has not been given to its culture as in Western Kentucky. It is, however, grown to such an extent as to warrant these sections being included in this area. Of late years it has been found that a very fine leaf-tobacco, similar to that raised in the Connecticut Valley, can be grown in Southern Wisconsin, and the increase of the product in that section has been so material as to be worthy of note. Prior to 1861 Tennessee was noted as a great tobacco-growing State, but repeated planting of this staple has exhausted the soil to such a degree as to make its culture unremunerative, and hence it has to a great extent been supplanted by cotton and grain. In a similar manner the soil of West Virginia has been injured till tobacco there is losing its position as the most important crop.

The section from which tobacco is shipped to Louisville is indicated by the blue shading, and requires some explanation.

The vicissitudes of commerce, variations in freight tariffs, high and low water in navigable streams, or other causes operating on facilities for marketing this product, sending it to one place in one season and to another the next, render it impossible to define this area with absolute certainty. Attention is called to the following observations, which embrace the opinions of some of the best informed tobacco merchants of Louisville, and which will aid in forming a correct judgment of the tobacco movement which centers at this point.

The division into districts, noted in the article on tobacco for 1875, (see reference-book, page 18,) is the one commonly accepted among the dealers.

1. The Paducah or western district ships about three-fourths of its product to Paducah direct. About one-fourth is shipped to Louisville, principally from Marshall, Calloway, Fulton, and Hickman Counties.

2. The Ohio River district ships principally to Louisville.

3. The Lower Green River district ships principally to Louisville also. In this district, however, the tobacco raised in Henderson, Union, and Daviess Counties is largely stemmed by local factories and exported direct. The balance is redried at Henderson and forwarded to this point.

4. From the Green River district the tobacco comes chiefly to Louisville.

5. Also from the Upper Green River district.

6. Clarksville, Tenn., controls most of the tobacco from the Clarksville district. There is also a great deal stemmed in this region and shipped direct to the East or exported. A very slight fraction finds its way to Louisville.

7. Louisville handles largely the product of the Cumberland River district.

8. The Owen and Kentucky River district divides its shipments about equally between Louisville and Cincinnati.

9, 10, and 11. The Boone County, the Pendleton County, and the Mason County districts send their tobacco almost entirely to Cincinnati.

The annual reviews of the tobacco market, (see reference-book, pages 4 to 25,) give the most complete crop-statistics that I am able to present.

In this city there are nineteen manufactories of tobacco.

I am informed by Col. J. F. Buckner, of the internal revenue department, that the tax paid on tobacco from July 1, 1875, to January 8, 1876, was $679,482.37; and from January 8 to April 1, 1876, it was $330,578.53.

Question 5. Please to present a schedule showing the relative magnitude of the principal and other commodities of the commerce of Louisville during the year 1875, specifying in the order of magnitude the principal articles and including all the rest under the title "all other articles." Please to mention in the relative order of importance the chief commercial and industrial interests of Louisville.

Answer. Table of manufacturing industries in relative order of importance for 1875:

Industries.	Product for 1875.
1. Pork packing	$8,141,000
2. Tobacco, plug, fine-cut, smoking, and cigars	4,231,300
3. Fermented liquors and spirits	4,225,000
4. Hydraulic cement	2,600,000
5. Tanneries	2,185,000
6. Founderies	1,950,000
7. Furniture, (including chairs)	1,875,000
8. Agricultural implements	1,850,000
9. Flour	1,764,000
10. Doors, blinds, sash, &c	1,430,000
11. Ready-made clothing	1,250,000
12. Book-binding and publishing	1,000,000
13. Stone and marble works	925,000
14. Pipe, (gas and water)	850,000
15. Lumber	825,000
16. Mineral oils and lard	775,000
17. Bridge-building	750,000
18. Picture-frames, show-cases, and molding	675,000
19. Rolling-mills	642,000
20. Bagging and rope	610,000
21. Saddles and harness	600,000
22. Candles and soap	582,000
23. Woolen-mills	570,000
24. Boots and shoes	500,000
25. Paper-mills	500,000
26. All other manufactures	9,945,000
Total	51,250,300

So far as the industrial interests of Louisville are concerned, the above is the best answer I can give to the inquiry within the time given me from available data.

In regard to the purely commercial interests of our city, I cannot do better than to refer to tables (Exhibit B) of imports and exports, to the published reports (sent herewith) of our board of trade, to information contained in Exhibit C, to facts given in answer to question 21, and to the review of Louisville's condition, given in the pamphlets entitled "Annual review of the trade and commerce of Louisville, by John Clarke & Brother," and "Kentucky and Louisville," both of which are sent herewith.

From all of these sources a general idea may be formed of the importance of Louisville as a point of exchange and distribution, and of the nature of the exchanges made here.

Question 6. Of the total quantity of coal received at Louisville during the year 1875, how many tons were received by the Ohio River from points above, and how many tons were received from mines in the State of Kentucky? Also, the quantity of coal received by rail from the States of Illinois and Indiana.

Answer. The total quantity of coal received at Louisville by various routes was, for the year 1875, as follows:

Kind.	How received.	Amount.
		Bushels.
Pittsburgh lump	River	31,717,000
Pittsburgh nut	....do	2,030,000
Kentucky coal, (various mines)	Rail	1,498,900
Pomeroy	River	700,000
Kanawha	....do	100,000
Cannel	....do	60,000
Anthracite, (2,600 tons)	Rail	78,432
Total		36,184,332

Our coal (anthracite excepted) is always bought and sold by the bushel. The above figures may be reduced to pounds, at the rate of seventy-six pounds to the bushel.

There is practically no coal whatever received from Indiana and Illinois. A few straggling car-loads might get across the bridge in the course of a year, but not enough to affect the trade of a single dealer, much less the city market. Five thousand bushels would probably cover the annual receipts from these sources. In 1873, when we had a short coal famine, a small amount of Indiana coal was forced into the market from that cause, but the import even then did not exceed 25,000 bushels. Probably it did not reach that amount.

Our home mines will relieve us from the necessity of resorting to that source of supply in the future.

Of the Pomeroy coal mentioned above, two-thirds was sold to steamboats and never came into the city. It was simply received here and sold from here.

The other, then, was consumed in Louisville. There was also received at this port 780,000 bushels of Pittsburgh coke during 1875.

Of the cannel-coal above mentioned, our gas-works used two-thirds, balance consumed in the city.

Question 7. Of the total coal received at Louisville, what proportion is consumed at that point, and what proportion is shipped below?

Answer. The coal shipped below in 1875 was as follows:

	Bushels.
Pittsburgh lump	20,700,000
Pittsburgh nut	1,090,000
Total	21,790,000

From the table, in answer to previous question, we find that—

Total coal received 1875 was	36,184,332
Amount shipped below	21,790,000
Consumed at Louisville	14,394,332

This amount was divided as follows:

Pittsburgh lump	11,017,000
Pittsburgh nut	940,000
Kentucky coal	1,498,900
Pomeroy	700,000
Kanawha	100,000
Cannel	60,000
Anthracite	78,432
Total	14,394,332

The amount of coke shipped below was 600,000 bushels, leaving for consumption here, (1875,) 180,000 bushels.

The coal shipped below is not so shipped by Louisville firms, but by the Pittsburgh miners direct. It is all, however, gauged at this point, (with the exception of a little Pomeroy, which is measured at Cincinnati,) so that ports below on the Ohio and Mississippi Rivers buy coal by Louisville gauge.

I append a table showing the total amount of coal which has come out of the Monongahela River since 1844. This river furnishes the coal-supply for the entire river-*section* of the West and Southwest from Pittsburgh to New Orleans.

Of the whole quantity thus mined about three-fifths stop as Louisville.

One-fifth is left here for consumption and the remaining two-fifths supply the markets of the Lower Ohio and Mississippi Rivers. A glance at the following table will show how immensely the coal-trade has grown during the thirty years of its existence.

Our table of Louisville consumption above given shows that Kentucky coal contributes one-tenth of the total coal consumed here.

Total amount of coal shipped out of the Monongahela River from 1844 to 1875—taken from the records at Pittsburgh, Pa.:

Year.	Bushels.
1844	2,737,150
1845	4,605,185
1846	7,605,185
1847	9,546,127
1848	9,818,361
1849	9,708,507
1850	12,297,767
1851	12,528,228
1852	14,839,341
1853	15,716,367
1854	17,716,367
1855	22.234,009
1856	8,588,005
1857	28,973,596
1858	25,696,168
1859	28,286,281
1860	37,947,732
1861	20,865,722
1862	18,583,956
1863	26,444,252
1864	35,070,916
1865	39,522,792
1866	42,615,300
1867	30,072,766
1868	45,301,000
1869	52,512,600
1870	57,576,400
1871	48,621,300
1872	54,208,800
1873	55,113,495
1874	65,881,700
1875	61,409,000

The preceding tables and information on this subject I have collated from our coal-dealers and coal-gangers, as there are none but private records kept on the subject.

Question 8. What are the present rates of toll on the Louisville and Portland Canal, both on ascending and descending tonnage?

Answer. The tolls on ascending and descending tonnage are the same. Present rates, as furnished by Mr. Adams, of the canal office, are: Ten cents per ton, registered tonnage, for steamers and model barges.

Eight cents per ton, computed tonnage, on square barges. Five dollars is the least charge for opening the locks.

On small tugs (7 to 20 tons) and on small flat-boats (10 to 20 tons) the charge is $5 each, whether they pass singly or in tows.

About fifteen of these small vessels may be locked through at once.

These rates were adopted on receipt of the letter from the Secretary of War to the Chief of Engineers under date of January 21, 1875.

Question 9. Please to present any facts at your command in regard to reduction made during the last three or four years in tolls on the Louisville and Portland Canal.

Answer. Before the transfer of the Louisville and Portland Canal to the Government the rates of toll were: Fifty cents per ton, registered tonnage, on steamers and model barges; three cents per superficial foot on square barges loaded with salt or produce; two cents per superficial foot on square barges otherwise loaded; and one cent per superficial foot on square barges empty. Small barges and tugs were charged regularly by their tonnage instead of the price.

The rates made by the Government on taking charge of the canal June 10, 1874, were: Ten cents per ton on steamers, registered tonnage; five cents per ton on square barges, calculated tonnage; five cents per ton on model barges, registered tonnage; three dollars for opening the locks; and three dollars each for tugs and small miscellaneous barges.

The present rates of toll (see answer to question 8) were adopted on January 21,

1875. For recent changes approved by the Secretary of War, see printed article in reference-book, page 44.

It will be observed, first, that the tolls have always been the same on ascending tonnage and descending tonnage; secondly, that the Government rates of toll are the same for vessels whether empty or loaded.

The present plan of making no difference in favor of empty vessels causes some barges to be laid up below the canal for "falls water." Some boating men think that the revenue would be larger if the tolls on empty barges were reduced, as in former times. This, however, could not be substantiated without trying the experiment. To allow barges to be towed over the falls the water must be at least thirty inches higher than is required for steamers. The cause of this is to be found in the fact that the Indiana chute is but 60 feet wide. The additional depth is required to prevent the outside barges of the tow from striking the rocks.

(NOTE.—At the present Government rates, the toll on a square barge is about $19. At first Government rates it was about $12.50. The old rate of the canal company made it $50 or $60.)

Question 10. What is the average time consumed in passing steamers through the Louisville and Portland Canal?

Answer. About two hours. The elements which enter into the computation of this quantity, however, are so variable that it is hard to get an exact result. A steamer may be passed through both chambers of the lock in one hour. But it is only necessary to use both chambers in low water. In extreme low water there is a difference in level between the lower river and canal of 26 feet. When this difference obtains, the lockage is effected by two operations, the upper chamber giving a rise or fall of 12 feet, and the lower one of 14 feet. When the difference between the canal and lower river is 12 feet, or less, the lockage may be accomplished in one chamber. Of course, in such instances, the labor and time required are but half as great as when both chambers are used. In the above estimate one hour is allowed for traversing the canal (2¼ miles) and one hour for lockage. This is a fair average when the canal has an ordinary stage of water, and is not abnormally obstructed.

Question 11. What is the average time of passing coal and other barges through the Louisville and Portland Canal?

Answer. About three or four hours. This is a more uncertain quantity than the previous one. Under favorable circumstances a tow of barges should pass through the canal very nearly as fast as a steamer. The lock-chambers will hold six barges at the same time, and with sufficient help to handle them, the time of their lockage should not exceed that of a steamer. In this, as in the previous answer, the stages of water in the canal and river are important elements. Barges are generally dropped through the canal by hand, and I understand that some delays have taken place from the lack of sufficient force to manage the tows while in transit. Another cause of delay has been observed in the blockading of the canal by overcrowding it with barges.

These matters are discussed in the printed article already mentioned, (see page 44 of reference-book,) which was clipped from the Louisville Courier-Journal of April 14, 1876.

Question 12. What has been the total cost of the Louisville and Portland Canal from the beginning to the present time?

Answer. Previous to the transfer of the canal to the Government, the books and records of the company were kept at the Savings Bank of Louisville. The treasurer of that institution informs me that on the 10th day of June, 1874, all of the books, records, documents, vouchers, printed matter, &c., whatever, were duly turned over to Mr. Tayler, Chief Comptroller of the Treasury Department, who was authorized to receive them. They are now among the archives at Washington, so that an authentic examination into the cost of the enterprise is impossible from this point.

Since writing the above I have consulted Captain McKenzie, who is in charge of the canal corps, and who has endeavored to make an estimate of the total cost of this work. His figures are as follows:

Total cost of the canal to the old canal company up to 1866, taken from one of the reports of the chief engineer	$1,825,403
Since which time the Government has furnished the following:	
In 1868 and '69, (this amount, probably, does not show in the books at Washington against the canal, as it was an appropriation for river and harbor improvements and used for canal)	263,200
In 1870, canal-appropriation	250,000
In 1871, canal appropriation	450,000
In 1872, canal-appropriation	300,000
In 1873, canal-appropriation	100,000
In 1875, canal-appropriation, (part of this is still on hand unused)	100,000
Total cost of canal to present time	3,288,603

Of this the Government has appropriated $1,463,200, cash, direct. When the purchase of the canal was effected the United States also assumed the payment of bonds to the amount of $1,172,000, so that the total cost of the canal to the Government has been $2,635,200.

There is at the canal-office here, among its papers, a full set of published reports of the old canal company from 1826 to 1867. They are, however, in such a shape that an accurate estimate of the cost could hardly be obtained from them.

I have herewith copied the financial statement from one of these reports—the eighteenth annual report, made December 31, 1842:

Louisville and Portland Canal Company, in general account, Dr.

Balance cash in treasury January 1, 1842	$54,440 14
Received for canal tolls in 1842	95,005 10
Total	149,445 24

Cr.

Paid dividend No. 17	$50,000 00
Paid balance of dividend No. 15 to United States	20,314 00
Paid incidental expenses of law-charges, taxes, salaries, &c.	1,882 31
Paid expenses on the canal	16,950 30
Balance cash in treasury	60,298 63
	149,445 24

As will be seen from the above, the division of canal expenses is not given in items of running expenses, cost of improvements, &c., so that an estimate only could be made and that an unsatisfactory one.

There is probably a copy of this set of reports in the archives of the Treasury or War Department.

The Treasury Department audited the accounts and took charge of the documents when the transfer was made, but the canal is now under the charge of the War Department, and to that Department all reports of its finances and operations are at present forwarded.

Should it be desirable to get from this point any information contained in these reports such information can, of course, readily be obtained.

Question 13. What railway-routes from Louisville to the Atlantic seaboard make common rates to Baltimore, to Philadelphia, to New York, and to Boston, respectively?

Answer. 1st. The Ohio and Mississippi Railroad, in conjunction with the Marietta and Cincinnati, Baltimore and Ohio, and Philadelphia, Wilmington and Baltimore for Baltimore and Philadelphia, thence via boat or Pennsylvania Railroad to New York or Boston, or Ohio and Mississippi with Atlantic and Great Western and Erie for New York.

2d. Jeffersonville, Madison and Indianapolis Railroad with Pittsburgh, Cincinnati, and Saint Louis, and Pennsylvania Railroad to Baltimore, Philadelphia, or New York.

3d. Louisville, Cincinnati and Lexington Railroad with Big Sandy steamers and Chesapeake and Ohio Railroad to Norfolk, thence via vessels to Baltimore, Philadelphia, New York, or Boston.

4th. The Louisville and Cincinnati mail line of steamers, in connection with rail and river at Cincinnati, will give the same rates to above points on through-bills of lading.

(NOTE.—Most lines giving through-rates to New York will do the same for Boston, in conjunction with Long Island Sound steamers or via rail from New York.)

Above information collected from ticket agents of the various roads at this point. I send tariff (Exhibit D) which shows the common rates given by the four mentioned routes to the various points on which they combine. These rates are identical with the fast-freight tariffs given by the agents at this point.

Question 14. Mention the fast-freight lines engaged in the transportation of merchandise from Louisville to the Atlantic seaboard; also the roads over which each line is operated and section of the country reached by each line.

Answer. Fast-freight lines operating between Louisville and the Atlantic seaboard, with roads operated over and section of country reached by each line:

1. *Union Line.*—Jeffersonville, Madison and Indianapolis Railroad, Pittsburgh, Cincinnati and Saint Louis Railroad, and Pennsylvania Railroad. This line reaches Southern and Central Indiana, Central Ohio, the mining regions of Pennsylvania, to Philadelphia and New York City.

2. *Merchants' Dispatch Transportation Company.*—Jeffersonville, Madison and Indianapolis; Cincinnati, Columbus, Cleveland, and Indianapolis, (Bee Line,) Lake Shore and New York Central, Hudson River, Boston and Albany, and New England Railroads. This line passes through Southern and Eastern Indiana, Northern Ohio, the so-called

"Western Reserve," (a great butter and cheese producing region,) Northwestern Pennsylvania, southern shore of Lake Erie to Buffalo, Central New York, and Central Massachusetts, from west to east.

3. *Great Western Dispatch.*—Ohio and Mississippi, Atlantic and Great Western, and Erie Railroads. Passes through Southern Indiana, diagonally across Ohio from southwest to northeast, oil and coal regions of Northwestern Pennsylvania, and Southern New York.

4. *White Line.*—Same as Merchants' Dispatch Transportation Company.

5. *Canada Southern Line.*—Jeffersonville, Madison and Indianapolis; Indianapolis, Peru and Chicago; Toledo, Wabash, and Western; Canada Southern, New York Central, Hudson River, and New England Railroads. Passes through Central Indiana from south to north, grain-producing regions of Southern Ontario to Buffalo, and thence same as Merchants' Dispatch Transportation Company.

6. *Hoosac Tunnel Line.*—Same as Merchants' Dispatch Transportation Company, except from Albany to Boston via Troy and Boston Railroad. Section of country reached same as by Merchants' Dispatch Transportation Company.

7. *Continental Line.*—Ohio and Mississippi, Marietta and Cincinnati, Baltimore and Ohio, and Philadelphia, Wilmington, and Baltimore Railroads. Reaches Southern Indiana and Southern Ohio through the coal and mining regions of Southeastern Ohio, oil regions of West Virginia, Eastern Pennsylvania, and Central Maryland, to Philadelphia and Baltimore.

(NOTE.—The business of the Merchants' Dispatch Transportation Company is almost wholly from east to west here. It takes comparatively very little eastern freight for the seaboard from Louisville.)

Question 15. What proportion of the total tonnage shipped from Louisville to the Atlantic seaboard is shipped by fast-freight line cars?

Answer. No record is kept of the tonnage shipped by the fast-freight lines, except the daily books of the companies. They make no summaries and publish no reports, and their policy seems to be to prevent investigations into their business. Hence, the answer to the above inquiry is an estimate based upon personal interviews and opinions.

About three-fourths of the through freight from Louisville to the eastern seaboard is placed by shippers directly in the hands of fast-freight lines; of the remaining fourth, that which is shipped by the Louisville and Cincinnati mail-line of steamers, is almost wholly turned over to fast-freight cars at Cincinnati.

The regular freight agents of the various roads take eastern freight and give through receipts from this point, but they charge fast-freight rates, and the fast-freight cars ultimately get hold of most of it, as all the lines which carry eastern through freight are co-operative. See answers to questions 16 and 14 and note concerning Merchants' Dispatch Transportation Company.

Question 16. Of the fast-freight lines operating east from Louisville, please to mention the companies which are co-operative, that is, composed of cars owned by railroad companies; and which non co-operative, that is owned by individuals or corporations other than railroad companies.

Answer. All of the fast-freight lines operating east from Louisville are co-operative except the Merchants' Dispatch Transportation Company, which corporation owns the cars it operates.

Question 17. Please to present any general statistics at your command illustrating the growth of commerce between the Western and Southern States via Louisville.

Answer. The only statistics we have on this point are those of the Louisville and Nashville Railroad and of the Bridge Company. They, however, furnish but partial elements in the computation.

Reference should here be made to the remarks in answer to questions 19, 32, and 33, as bearing generally upon this subject.

The schedules of exports and imports over the Louisville and Nashville Railroad, shown in Exhibit C, give us these facts:

First. The imports of general merchandise via that road attained a maximum, in the year of 1872-'73, of 58,000,000 pounds, thus being nearly six times as great as they were six years previous.

Secondly. The Louisville and Nashville Railroad exports of general merchandise were the highest in 1871-'72, being then 228,000,000 pounds, or four times as large as in 1866-'67, five years previous. These figures are partially indicative of the rapid increase of commerce since railroads became avenues of transportation; see question 19.

That they attained maxima in the years from 1871 to 1873 may give partial support to the theory advanced under question 19, that the handling trade of Louisville has about attained its growth.

The largest amounts of freight handled over the bridge, (see tables 1 and 2, question 28,) occur—

	Pounds.
Going south, 1874	536,000,000
Going north, 1873	363,000,000

A comparison of these bridge tables with the figures given concerning the Louisville Railroad gives a general idea of this commercial growth, but the data are too limited to enable us to draw satisfactory conclusions other than those developed in the after portions of this report alluded to above.

Question 18. For every one hundred car-loads of freight shipped from Louisville east to the States of the Atlantic seaboard, about how many car-loads are received at Louisville from such States?

Answer. From the estimate made in answer to question 28, we note that since February 24, 1870, the Jeffersonville, Madison and Indianapolis, and the Ohio and Mississippi Railroads have carried over the bridge loaded freight-cars as follows:

Year.	Going north	
1870	5,550	8,825
1871	8,000	14,142
1872	10,798	21,066
1873	18,131	25,505
1874	17,761	26,786
1875	15,901	26,215

In the above totals there is no method of dividing the local from the freight through to the Atlantic seaboard. The best informed railroad men here estimate that one-fourth of the total tonnage each way is a through exchange between Louisville and the Atlantic seaboard.

This being the case, the ratio of through cars received to through cars shipped would be the same as between the totals above given.

Deducing these ratios, we have—

Years.	Ratio of shipments to receipts.
1870	as 100 to 159.549
1871	as 100 to 176.775
1872	as 100 to 195.091
1873	as 100 to 140.670
1874	as 100 to 150.813
1875	as 100 to 164.863

Above expressed in car-loads.

These ratios, up to 1872, will only apply to the Jeffersonville, Madison and Indianapolis Railroad. At that time the Ohio and Mississippi Railroad completed its arrangement for crossing the bridge, and the ratio thenceforward will show for the totals for both roads.

From the auditor of the Louisville, Cincinnati and Lexington Railroad I learn that for the year ending December 31, 1875, that road shipped east from Louisville 85,502 tons of freight and received 75,011 tons of freight.

Reducing this to car-loads, we have—

	Car-loads.
Receipts	7,501
Shipments	8,650

Which would show a ratio between the shipments and receipts of 100 to 86.716 over the Louisville, Cincinnati and Lexington Railroad.

We may adopt the same ratio for this road as for the others. The auditor is unable to state how much of his freight represents a through exchange between here and the Atlantic States. He, however, estimates that three-fourths each way is an exchange between Louisville and Cincinnati, and thinks that one-third of such exchange may be through freight to or from the States of the eastern seaboard.

Combining the Louisville, Cincinnati and Lexington ratio with the Ohio and Mississippi, and Jeffersonville, Madison and Indianapolis ratio for 1875, we find the ratio of the total freight shipped to that received—

SUMMARY.

	Ratio of shipments to receipts.
Ohio and Mississippi, and Jeffersonville, Madison and Indianapolis Railroads	as 100 to 164.863
Louisville, Cincinnati and Lexington Railroad	as 100 to 86.716
Total—Ohio and Mississippi, Jeffersonville, Madison and Indianapolis, and Louisville, Cincinnati and Lexington Railroads	as 100 to 137.330

Question 19. Please to present a brief sketch of the changes which have taken place in the commerce of Louisville since railroads have become avenues of commerce.

Answer. Louisville has always been a large commercial center. It is to her importance as a distributing-point between the Northeast and South that she owes the greatest part of her wealth and her commercial importance. This has been especially the case until within the past few years. Two causes have largely contributed to this result.

First. The geographical position of Louisville is such as to make it the natural point of exchange between the southern producers and eastern manufacturers. Situated upon the Ohio Falls, the only obstruction to navigation between Pittsburgh and New Orleans, she was able, as was no other river city, to seize upon every advantage of river transportation when water was the great commercial highway.

Secondly. The development of her railway outlets was an important element in fostering her commercial prosperity. Her first railway communications, which were with the North and East, served to increase her facilities for receiving supplies, and, as a consequence, enlarged her trade as a distributer.

Her oldest Kentucky railroad, the Louisville and Lexington, opened communication with the blue-grass stock and grain producing section, and gave to one of the richest regions of the now cotton-raising South an outlet through this point.

The next, and by far the most important connection as regarded the mercantile prosperity of Louisville, was her Nashville railroad.

This avenue of communication gave to her the position of the first western city to tap by rail the vast tobacco and cotton-producing territory of the South. And she thus held the key to Southern Kentucky, Tennessee, Mississippi, parts of Alabama and Louisiana, Arkansas, and Northern Texas. Thenceforward, as all these sections to a very large extent sought their supplies at Louisville, her importance as a middle depot was very materially and rapidly increased. Thus we note, as the first change produced by railroads upon Louisville commerce, was to intensify and largely increase its value in the peculiar channel which it already occupied.

Let us look farther, and see if this increased prosperity continued to advance proportionally as railroad intercommunication in the South was developed. Cincinnati, as the east side, put out her Southern Railroad and tapped our blue-grass region and trade.

Saint Louis completed her railroad communication south, and by this movement our western trade in Arkansas and Texas was materially increased. Memphis and Nashville, by their eastern outlets and increased facilities, became, in their turn, the supply-depots for greater or less southern areas, and again the territory for goods which Louisville merely handled, was narrowed. Railroads increase the number and decrease the size of distributing-points, so that now our city is no longer the keystone of the South. She still has a large trade throughout the South, larger, probably, than ever before. First, because the channels of trade are not diverted suddenly, and, secondly, because she is making of herself a manufacturing center. This brings us to the second great change that has been wrought in her commerce by the introduction of railroads, viz, the building up of her manufactures.

Two elements must here be alluded to which bear upon this subject. Soon after the South was opened up by railways, the great revolution in southern labor took place; and in the transition which has succeeded so radical a change, the financial condition of the southern country has been very unsettled. This fact has led those cities having large trade in that section to look more carefully to its condition and to encourage those branches of commerce most necessary to the people. This influence, to a slight extent, limited Louisville's trade in exchanges and quickened her manufacturing enterprise.

The extent to which Louisville manufactures are adopted by the South shows to how great a degree they might contribute to her prosperity. If we except the region of home-territory comprised in Central and Southern Kentucky and Northern Tennessee, we find that Louisville is looked upon as sole headquarters only for her manufactured goods. She has trade for dry goods and hardware and imported provisions all over the South, but other cities sell the same goods in the same regions at competitive prices. The manufactured articles of Louisville, however, such as furniture, plows, boots and shoes, cement, candles, rope and bagging, whisky and tobacco, &c., are shipped to Texas and Arkansas and Louisiana and Mississippi and Tennessee and Alabama and Georgia. And in such articles only do we find her, to a greater or less extent, the acknowledged headquarters of trade.

One fact it is well to observe in this connection, viz, that the railroad outlets to the direct South are monopolies at this point. This, of course, has militated against the distribution of all of Louisville's southern exports. And one of the problems to which she will have to give especial attention as she takes her place among the large and competitive manufacturing cities of the West will be cheap transportation of her products, if she would hold that position successfully.

Glancing at the records of Louisville, we find that it is since the introduction of railway communication that her manufacturing industry has been wholly developed. Yet, as would be natural to suppose, the realization of the importance of this interest

did not burst upon her at once. Deceived by the sense of security which present success is sure to engender, she did not at first give the attention to the new branch of her prosperity which the importance of its influence demanded. The same reasons which cause trade to be slow to adopt new channels caused Louisville, as a city, to be backward in recognizing the tendency of commercial circumstances.

Had she been less favored in her geographical position, had she been less fortunate in extending her commercial interests, or had any causes compelled her earlier to devote the energy of which she was capable to the new element, her old commercial relations, the result of three-fourths of a century of successful trade, would have guaranteed to the new commerce, from the first, an unparalleled prosperity, and her present and coming wealth would be established upon a broader basis. Hence, in so far as railroads, by the sudden development of commerce, have imparted to mere exchanging interests at this point the sense of security, of a fancied independence, to this extent do I regard them as having been injurious to the lasting and vital prosperity of Louisville.

Question 20. State in this connection the year when railway communication was first opened with States of the Atlantic seaboard, and when railway communication was first opened with points of the South Atlantic seaboard; also, with ports on the Gulf.

Answer. The railroads now centering in Louisville are—

1. Jeffersonville, Madison, and Indianapolis, composed of the old Jeffersonville Railroad and the Madison and Indianapolis Railroads, opened 1847.
2. Ohio and Mississippi Railroad, main line, opened 1857.
3. Louisville and Nashville Railroad and connections, opened November 1, 1859.
4. Louisville, New Albany and Chicago Railroad, opened ———.
5. Louisville, Cincinnati and Lexington Railroad, opened June 28, 1869.
6. Louisville, Paducah and Southwestern Railroad, opened 1874.

Our first railway outlet to the Atlantic seaboard resulted from the completion of the Steubenville and Indiana Railroad, in 1858, (this road is now a part of the Pittsburgh, Cincinnati and Saint Louis Railroad,) which completed the links, as follows:

Louisville to Seymour, Indiana, via old Jeffersonville Railroad, opened in 1847; thence to Cincinnati via Ohio and Mississippi Railroad, opened in 1857; thence to Columbus and Pittsburgh via Steubenville and Ohio Railroad, opened 1858; thence to Philadelphia and New York via Pennsylvania Railroad, opened February 15, 1854.

Louisville to South Atlantic seaboard, in 1859, as follows: To Nashville via Louisville and Nashville Railroad, opened 1859; thence to Chattanooga via Nashville and Chattanooga Railroad, opened 1854; thence to Atlanta via Western and Atlantic Railroad, opened 1850; thence to Charleston via South Carolina Railroad, opened 1840.

Louisville to Gulf ports, in 1859, thus: To Humboldt via Louisville and Nashville and Memphis and Louisville Railroads, opened November 1, 1859; thence to Mobile via Mobile and Ohio Railroad, opened 1859.

The opening of the New Orleans, Jackson and Great Northern Railroad in 1859, and of the Mississippi Central Railroad in 1860, gave us in the latter year our first direct railway communication to New Orleans.

Question 21. Please to state approximately the value of imports into and exports from Louisville by river and rail during the year 1875.

Answer. The only itemized statistics at our command with relation to these points is given in Exhibit C, which shows Louisville and Nashville Railroad imports and exports. From that source we derive the following schedule of values of imports and exports over that railroad:

Imports of Louisville and Nashville Railroad for the year ending July 1, 1875.

Articles.	Amount.	Value.
Wheat ..... bushels..	205, 335	$225, 868
Corn ..... do....	1, 212	848
Other grain ..... do....	9, 202	7, 362
Bacon ..... casks..	31	3, 100
Do ..... tierces..	25	2, 500
Rope and bagging ..... pounds..	53, 894	6, 466
Tobacco ..... hogsheads..	25, 244	2, 524, 400
Cotton ..... bales..	214, 442	10, 722, 100
Flour ..... barrels..	7, 503	45, 018
Potatoes ..... do....	10, 493	31, 479
Beef, pork, and lard ..... do....	122	3, 660
Liquor ..... do....	20, 242	204, 200
Oil ..... do....	19, 816	396, 320
Molasses ..... do....	9, 407	235, 175
Lime and cement ..... do....	600	2, 131
Sugar ..... hogsheads..	6, 201	806, 130
Do ..... barrels..	78	3, 900

Imports of Louisville and Nashville Railroad for the year ending July 1, 1875—Continued.

Articles.		Amount.	Value.
Coffee	bags..	8,719	$261,570
Nails	kegs..	101	303
Horses and mules	cars..	51	102,000
Cattle	do....	1,400	420,000
Hogs	do....	1,092	1,092,000
Sheep	do....	222	266,400
Brick and sand	do....	2	50
Rock	do....	350	8,750
Coal	do....	1,425	49,875
Lumber	do....	1,587	238,050
Timber	do....	336	33,600
Wood	do....	545	40,875
Hoop-poles	do....	136	6,800
Tan-bark	do....	1,802	90,100
Posts	do....	146	21,900
Iron	do....	3,355	1,006,500
Hay	do....	124	18,600
Furniture	do....	1	2,500
Machinery	do....	1	3,500
Agricultural implements	do....	1	2,500
Staves	do....	195	39,000
Fruit	pounds..	3,499,704	174,985
General merchandise	do....	57,196,491	14,299,123
Total			33,399,632

The above were hauled by 21,036 cars; hence average value per car was $1,588.

Exports of Louisville and Nashville Railroad for the year ending July 1, 1875.

Articles.		Amount.	Value.
Wheat	bushels..	36,878	$40,565
Corn	do....	958,673	671,071
Other grain	do....	275,484	220,387
Bacon	casks..	89,395	10,993,700
Do	tierces..	20,542	
Rope and bagging	pounds..	7,089,996	850,799
Tobacco	hogsheads..	426	42,600
Cotton			
Flour	barrels..	147,074	882,444
Potatoes	do....	78,621	235,863
Beef, pork, and lard	do....	32,374	971,220
Liquor	do....	71,632	7,163,200
Oil	do....	79,483	1,589,660
Molasses	do....	8,513	212,825
Lime and cement	do....	24,339	85,186
Sugar	hogsheads..	881	114,530
Do	barrels..	45,459	2,272,950
Coffee	bags..	57,376	1,721,280
Nails	kegs..	84,616	253,848
Horses and mules	cars..	558	1,116,000
Cattle	do....	96	7,200
Hogs	do....	10	10,000
Sheep	do....	13	15,600
Brick and sand	do....	117	2,925
Rock	do....	27	675
Coal	do....	388	13,580
Lumber	do....	107	16,050
Timber	do....	2	200
Salt	barrels..	33,142	41,427
Ice	cars..	118	5,900
Staves	do....	14	2,800
Hay	do....	368	55,200
Furniture	do....	89	222,500
Machinery	do....	65	227,500
Agricultural implements	do....	149	372,500
Iron	do....	490	196,000
Fruit	pounds..	7,224,879	361,244
General merchandise	do....	188,565,028	47,141,257
Total			78,061,286

The above value was hauled by 28,978 cars, which gives for an average value carried by each car of $2,695.

Our average given previously for valued car-load of imports via Louisville and Nash-

ville Railroad was $1,588. Combining these results, we have as average value of car-load of freight for 1874-'75, $2,141.

If we allow this to be the average value of car-loads of merchandise from other sections, we may approximate to the full value of imports and exports, overlooking the fact that the Louisville and Nashville Railroad year ends in July.

The number of cars which crossed the bridge going north, 1875, (see question 23,) was 15,901; the number going south, 26,215. On this basis we would have the values thus: Going north, $34,044,041; going south, $56,126,315.

The number of cars shipped and received over the Louisville, Cincinnati and Lexington Railroad (see question 18) is as follows: Going northeast, 8,650; coming southwest, 7,501. Reducing these, we have for value shipped, $18,519,650; received, $16,059,641.

Collecting the results, we have for 1875—

Source.	Imports.	Exports.
Ohio River bridge, approximate	$56,126,315	$34,044,041
Louisville, Cincinnati and Lexington Railroad, approximate	16,059,641	18,519,650
Louisville and Nashville Railroad, estimated	33,399,638	78,061,286
Total approximate,	105,575,594	130,624,977

The above approximations contain the following element of error:

First. In all cases no allowance has been made for freight which has passed through the city without stopping. Table XXXV (page 170, Louisville and Nashville Railroad report for 1874 and 1875) shows that on that road about five-eighths of the south-bound and nearly five-sixths of the north-bound freight so passed. We have no means of getting at this amount for the other roads. This element, if found and applied to our result, would lessen the values of both imports and exports very largely.

Second. In the above estimate no account has been made of the receipts and shipments by river by the Louisville, Paducah and Southwestern Railroad, nor by the New Albany and Chicago Railroad, each of which would contribute a very material item to our results. Neither has allowance been attempted for the amount of exports and imports by private carriers. Both amounts have been impossible to obtain. These last-mentioned sources of error, if corrected, would swell our results.

No definite idea can be formed of the exact size of either element, but it is judged, from the general nature of our commerce and exchanges for the past year, that if both elements were calculated and applied the resulting value of imports and exports would be at least one-third less than the amounts given in our table.

Question 22. Please to mention the commodities which at the present time are shipped to points below on the Ohio River and Mississippi River chiefly or exclusively by river, and the commodities which are so moved chiefly and exclusively by rail.

Answer. Commodities are not readily divided into articles chiefly shipped by river and those chiefly shipped by rail. With the exceptions mentioned hereafter, all articles may be said to be chiefly shipped by rail.

In general since the introduction of railroads the heavy tonnage only by river has increased. Between 1864 and 1875, at the rate of from 5 to 7 per cent. per year. By heavy tonnage is meant iron, iron-ore, coal, fire-brick, fire-clay, salt, heavy machinery, and articles of that description. The only commodity shipped from this point to the South by Ohio and Mississippi Rivers exclusively by water is coal. The river ships largely, however, of live stock, including sheep and horses and mules, (very few cattle and hogs south,) furniture, cement and lime, pork, bacon, groceries, plows, gas and water pipes, lumber, bar-iron, paper, &c.

The commodities shipped south almost exclusively by rail are grain, rope and bagging, liquor, oil, ice, fruit, nails, and nearly all general merchandise.

(NOTE.—The only exclusive trade which the river possesses is to such points as are not attainable by railway communication.)

A general idea of our railway commerce south may be obtained from the table of Louisville and Nashville Railroad exports, given in Exhibit C.

Question 23. Please to present general facts in regard to the area of the production of spirits distilled from grain and as to the movement of that product.

Answer. The table sent herewith, (see Exhibit F,) compiled by the Newcomb Buchanan Company, our largest dealers, shows accurately the production of whisky in Kentucky in each district for every month from July 1, 1868, to December 31, 1874. Also, the total product of the United States and of the States of Pennsylvania, Maryland, and West Virginia. The States of Ohio, Indiana, and Illinois produced largely of cheap whiskies. Cincinnati sends out a large part of the Ohio product, and statistics concerning its amount and movement might probably be obtained at that city.

The Kentucky product has more of a reputation for quality than quantity. This reputation is based upon the care with which the liquor is distilled, the careful selection of the grain, the purity of the water used in its manufacture, and the "tone" which is more frequently given to it by age in Kentucky, than by drugs.

There are forty-seven wholesale liquor-dealers and thirty-three rectifiers in the city of Louisville, besides eight distillers in Jefferson County.

Louisville handles from two-thirds to three-quarters of the whole manufactured product of Kentucky. And of this amount not more than 20 per cent. is high-wines, (*i. e.*, a low grade of unrectified goods;) about 80 per cent. being a high quality of refined spirits.

This product is shipped to all parts of the United States. The statistics of shipment have never been compiled, but so far as I can learn from the personal opinions of our larger dealers, they would not present any peculiar area of movement. The number of people, more than any other element, regulates the movement.

One fact, however, has been deduced, viz, that the South and Southwest use comparatively few "straight goods," by which are understood high grades in original packages.

Question 24. Has the movement of spirits by river materially decreased since the introduction of railroads, and has the movement by rail correspondingly increased?

Answer. They have. In this case, as everywhere, after the introduction of railroads, water transportation has become of secondary magnitude.

Before the war from 90 to 95 per cent. of the whisky shipments from this point were made by water. At present hardly more than 5 per cent. are so moved.

The "regular" river shipments only comprise such points as cannot be reached by rail. To all points where river and rail are competitive avenues of transportation, the river shipments are spasmodic and the railroads get the bulk of the liquor freight. With fermented and alcoholic spirits this is especially the case, as the product is one on which the freight bears such a small ratio to the value, that speed in transportation is especially desirable.

The information contained in this and in the previous answer has been obtained from personal inquiries, and estimates of the dealers.

Question 25. To what extent is flour manufactured in Louisville, and of the entire shipments of flour made in Louisville, what proportion is shipped south, and what proportion shipped north and east?

Answer. There are at present five flour-mills in Louisville. They have a capacity of 280,000 barrels of flour per annum. Capital invested, $762,000. The product last year (1875) was valued at $976,568. Total number of barrels of flour made, 145,640. Hands employed in milling, 75. Of the flour made last year, about 45,100 barrels were shipped north and east, and about 57,000 barrels were shipped south. The balance, 43,540 barrels, was consumed at home.

The bulk of the southern flour shipments are made in the winter and spring—from December to May.

The eastern and northern shipments are larger from June to November. The southern shipments are made up largely of the lower grades of flour.

In the above figures I have included the product of the largest mill around the Falls, which is unfortunately situated on the northern bank of the Ohio.

The owners of the mill are all residents of Louisville. The grain is bought and the flour sold here. Louisville capital and enterprise are at the head, and it is essentially a Louisville institution. It has so been considered in the previous Louisville estimates which have been made. Should it be thought desirable to deduct its operations, I herewith append its status, included in the above estimate: capacity, 135,000 barrels flour; capital, $550,000; employed in 1875 thirty hands; made 90,000 barrels flour; value of product, $600,000; shipments, 45,000 barrels north and east, and 45,000 barrels south.

In estimates for value of product for 1875, I have included bran, shorts, corn-meal, rye-flour, &c., intending to cover the total product.

The product of our home mills last year was materially damaged by the injury to the wheat crops by flood, so that it was hardly a fair average year for the manufacture of breadstuffs at this place. From one-fifth to one-third of the grain which is handled by the flour-men comes direct from the farmers. This quantity never appeared "on 'change" at all, and no account was ever made of it as the board of trade estimates.

Question 26. Mention the competing railroads from Louisville to Baltimore, Philadelphia, and New York, respectively, and from Louisville to three or four principal points south, including the Ohio and Mississippi Rivers in the competing routes mentioned.

Answer. I. Jeffersonville, Madison and Indianapolis, to Indianapolis or Louisville, Cincinnati and Lexington to Cincinnati; thence Pittsburgh, Cincinnati and Saint Louis to Pittsburgh, and Pennsylvania Railroad to Baltimore, Philadelphia, or New York.

II. Ohio and Mississippi to Cincinnati; Marietta and Cincinnati, and Baltimore and

Ohio, to Baltimore. Add for Philadelphia, Philadelphia, Wilmington and Baltimore Railroad, or via water from Baltimore to New York.

III. Louisville, Cincinnati and Lexington, or Ohio and Mississippi Railroads, or mail-line steamers to Cincinnati; thence by Big Sandy steamers to Huntington, W. Va., and Chesapeake and Ohio Railroad to Norfolk; thence via vessels to Baltimore, Philadelphia, or New York.

(NOTE.—It is to be understood in all instances that competition via Chesapeake and Ohio is not active, as it involves, under existing circumstances, so much rehandling.)

For points in the South we will take Mobile, Memphis, New Orleans, and Galveston.

I. Mobile: Louisville, Nashville and Great Southern to Decatur, South and North Alabama to Montgomery, and Mobile and Montgomery to Mobile; or Louisville, Paducah and Southwestern to Paducah, Memphis and Paducah (or Paducah and Memphis) to Troy, Tenn., and Mobile and Ohio to Mobile.

II. Memphis: Ohio and Mississippi Rivers, or Memphis branch of Louisville, Nashville and Great Southern Railroad.

III. New Orleans: (1) Ohio and Mississippi Rivers.

(2) Louisville and Nashville and Great Southern and South and North Alabama to Montgomery, Mobile and Montgomery to Mobile, and New Orleans, Mobile and Texas to New Orleans.

(3) Louisville and Nashville and Great Southern to Humboldt, and New Orleans, Saint Louis and Chicago to New Orleans.

IV. Galveston, Tex.: (1) Ohio and Mississippi Rivers to New Orleans, and Morgan Line to Galveston.

(2) Louisville, Nashville and Great Southern to Montgomery, Mobile and Montgomery and New Orleans, Mobile and Texas to New Orleans; thence Morgan Line to Galveston.

(3) Louisville and Nashville, &c., to Humboldt; New Orleans, Saint Louis and Chicago to New Orleans; thence Morgan Line.

(4) Ohio and Mississippi, or Jeffersonville, Madison and Indianapolis and Vandalia to Saint Louis, and thence via Missouri, Kansas and Texas to Dennison, Houston and Texas Central to Houston, and Galveston, Houston and Hamsbury to Galveston; or from Saint Louis via Saint Louis and Iron Mountain to Texarkana, Texas and Pacific to Longview, International and Great Northern to Houston, and Galveston, Houston and Hamsbury to Galveston.

(NOTE.—In general, the Ohio and Mississippi to Saint Louis, or Jeffersonville, Madison and Indianapolis and Vandalia line to same point, will compete with all New Orleans lines for Texas business.)

Question 28. The number of cars which have crossed the Ohio River on the bridge each year since its completion?

Answer:

TABLE 1.—*Showing number of loaded freight-cars which have crossed the Ohio River Bridge.*

GOING NORTH.

Year.	Amount of pound-freight carried.	Number cars, at various rates.	Revenue from specials, at about $4 each.	Number barrels flour.	Number barrels oil.	Number barrels whisky.	Cars cement.	Locomotives.	Passenger-cars.	Total number of cars.
1870	89, 494, 972	.....	$5, 700 38	.....	.....	.....	.....	.....	.....	5, 550
1871	133, 131, 411	1, 205	555 19	.....	.....	.....	.....	3	.....	8, 000
1872	189, 591, 257	1, 072	438 32	13, 774	.....	.....	.....	6	2	10, 798
1873	331, 055, 436	725	3, 031 88	4, 380	2, 581	.....	.....	.....	.....	18, 131
1874	329, 995, 201	1, 119	.....	10, 055	2, 049	.....	.....	.....	16	17, 761
1875	299, 816, 512	853	.....	1, 986	1, 399	71	7	1	2	15, 901
Total	1, 366, 084, 791	4, 974	9, 725 77	30, 195	6, 029	71	7	10	20	76, 141
Cars	68, 304	4, 974	2, 431	302	121	2	7	10	20	.....

NOTE.—In the right-hand column of totals the locomotives (10) and passenger-cars (20) are omitted.

TABLE 2.—*Showing number of loaded freight-cars which have crossed the Ohio River Bridge.*

GOING SOUTH.

Year.	Amount of pound-freight carried.	Number of cars at various rates.	Revenue from specials, at about $4 each.	Number barrels flour.	Number barrels oil.	Number barrels whisky.	Number barrels pork.	Barrels beef.	Casks hams.	Barrels vinegar.	Locomotives.	Passenger-coaches.	Total number of cars.
1870	76, 893, 556	.....	$20, 039 44	.....	.....	....	.....	....	....	....	....	....	8, 855
1871	168, 094, 674	4, 948	3, 155 69	.....	.....	....	.....	....	....	....	62	25	14, 142
1872	311, 748, 346	4, 722	1, 170 50	46, 425	.....	....	.....	....	....	....	51	22	21, 086
1873	349, 704, 099	4, 937	3, 031 88	129, 739	51, 400	....	.....	....	....	....	79	17	25, 505
1874	376, 256, 158	5, 366	204 08	201, 797	25, 801	655	112	243	104	....	5	6	26, 786
1875	420, 927, 674	4, 130	.....	67, 027	15, 913	321	2, 213	....	....	37	12	47	26, 215
Total	1, 703, 624, 507	24, 103	27, 601 59	444, 988	93, 114	976	2, 325	243	104	37	215	117	122, 569
Cars	85, 181	24, 103	6, 900	4, 449	1, 862	19	46	5	3	1	215	117	.....

NOTE.—In the right-hand column of totals the locomotives (215) and passenger-cars (117) are omitted.

The bridge company keeps no record of the number of cars which cross the bridge. Its revenue is derived from the amount of freight and number of passengers which are carried over it. The foregoing tables have been compiled from the annual reports of the secretary and treasurer of the company. The object of these schedules has been to deduce from the amount of freight carried the number of loaded freight-cars which have crossed the bridge. (The number of passenger-cars cannot be obtained by the same method of reasoning, and these will be referred to hereafter.)

I send herewith the only printed reports which the bridge company has ever issued. In the fourth annual report, table 4, page 8, will show the nature of the data upon which my calculations have been founded.

There are very few empty cars which come south over the bridge. Some cars cross which are partially full of Louisville freight from way stations. But in my estimates I have only allowed 20,000 pounds per loaded car, whereas the most of the loaded cars carry 22,000, or in some cases as high as 23,000 pounds, so that the surplus of loaded cars which this allowance would give over and above the actual number that have crossed, will very nearly counterbalance the number of empty or partially-loaded cars that have come south. A great many whole trains of empty cars cross the bridge going north.

Explanation of the foregoing tables, Nos. 1 and 2.—Table 1 shows north-bound, and table 2 south-bound freight. The first column in each schedule, commencing at the left, shows the number of pounds of freight carried at pound rates over the bridge. Dividing the totals of these columns by 20,000 (a car-load in pounds) gives the number of cars required to carry them.

The second columns are devoted to the number of car-loads of freight which were carried at so much per car, and their totals furnish us further items of our result without division or other change.

The third columns give revenue from cars at special rates, the average of which I am informed by the secretary, Mr. Quarrier, was about $4. Hence the reduction to cars is accomplished by dividing the totals by 4. The flour-columns are reduced to car-loads by dividing by 100 the number of barrels in a car. The columns of oil, whisky, pork, beef, and vinegar are calculated at 50 barrels per car-load.

I have allowed three cars for the 104 casks of hams carried south in 1874.

The columns for locomotives and passenger-cars show the number of these that have been hauled over the bridge as freight for other roads, principally in transit from the manufacturers to the destined road of their operation.

Our total, according to this estimate, shows up to January 1, 1876, loaded freight-cars going north, 76,141; total freight-cars coming south, 122,569.

But all of the cars which come south over the bridge have no outlet except to return north in the same way, so that for a grand total of empty and loaded freight-cars which have crossed the bridge since its opening we must double the number which have come south. This gives us total freight-cars both ways, 245,138.

The result of this estimate is probably the nearest approach to accuracy obtainable.

The absolute number of passenger-cars cannot be obtained at all. We may arrive at an approximation by the following method, but as the passenger traffic and the freight traffic vary in different ratios the result is not recommended for exactness.

From the officers and employés at and around the bridge depot, I learn that a fair average of the number of cars now passing over the bridge daily is as follows:

	Loaded freight.	Passenger.
Ohio and Mississippi	49	52
Jeffersonville, Madison and Indianapolis	54	25
New Albany and Jeffersonville	..	39
Total	103	89

Trains commenced to run regularly over the bridge February 24, 1870. (See Third Annual Report of the Bridge Company, page 3.)

From that time to January 1, 1876, there were 2,136 days. Allowing 103 freight-cars (loaded) per diem, we have a total of 220,008 loaded cars for the number crossing in that time.

This is larger than our previous estimate, as it should be, for we have made no deductions for the increase of traffic nor for the fact that the Ohio and Mississippi Railroad did not run trains over the bridge till 1872, (when we notice that the freight carried was nearly double that of the previous year.)

The surplus shown in our second estimate, however, would not be sufficient to account for both these factors of increase were it not true that the daily average (upon which the second calculation is based) is probably an underestimate for the present yearly trade. The road-agents at the bridge say that business is now very dull. Allowing, then, that our estimate is only 10 per cent. above a true average for the past six years, we have:

Number of cars second estimate	220,008
Less 10 per cent. reduction as above	22,000
True number as per second estimate	198,008
South-bound cars, table 2	122,569
North-bound cars, table 1	76,141
Loaded, total, first estimate	198,710
Loaded, total, second estimate	198,008
Difference for six years	702

This gives us an error of but 117 cars per annum on freight estimate.

Operating in the same way upon the passenger-cars we find:

2,136 days, at 89 cars per day	190,104
Less 10 per cent	19,010
Approximate total number of passenger-cars	171,193

From above we have:

Estimated number of freight-cars, north and south	245,138
Estimated number of passenger-cars, north and south	171,193
Giving a grand total of	416,331

cars, freight and passenger, loaded and empty, which have crossed the bridge north and south since its completion, February 24, 1870, and up to January 1, 1876.

Question 29. Statistics of the increase of population and wealth of Louisville during the last fifteen years.

Answer. The only statistics as to increase of population of Louisville for the past fifteen years exist in the United States census-records and our city directories.

	Names.
J. W. Williamson's Directory for 1865–'66 contained	22,825
Edwards' Directory for 1866 contained	23,265
Edwards' Directory for 1867 contained	25,359
Edwards' Directory for 1868 contained	25,839
Edwards' Directory for 1869 contained	26,260
Edwards' Directory for 1870 contained	28,629
C. K. Carew's Directory for 1871 contained	34,466
C. K. Carew's Directory for 1872 contained	35,986
C. K. Carew's Directory for 1873 contained	37,890
C. K. Carew's Directory for 1874 contained	39,840
C. K. Carew's Directory for 1875 contained	40,965
C. K. Carew's Directory for 1876 contained	44,562

From 1860 to 1865 we had no directory, and no records exist on the subject.

The United States census for 1870 gave to Louisville a population of 100,752. The ratio of the names in the directory to the population was 3.52 nearly, and I find that from 3½ to 5 are ratios used in various cities for the determination of population. Using, therefore, 3½ as the ratio where we estimate the population from the directories, we have the following table.

The population previous to 1860 as given below I obtained from a little manual found in the office of our city book-keeper, issued by the general council in 1874.

Year.	Authority.	Population.
1788	Manual general council	30
1800	Manual general council	600
1810	Manual general council	1,357
1820	Manual general council	4,000
1830	Manual general council	10,000
1840	Manual general council	21,000
1850	Manual general council	43,217
1860	United States census	68,033
1865	Williamson's Directory	79,887
1866	Edwards' Directory	81,427
1867	Edwards' Directory	88,756
1868	Edwards' Directory	90,436
1869	Edwards' Directory	91,910
1870	United States census	100,752
1871	Carew's Directory	120,631
1872	Carew's Directory	125,951
1873	Carew's Directory	132,615
1874	Carew's Directory	138,180
1875	Carew's Directory	143,377
1876	Carew's Directory	155,967

From 1860 to 1865, the increase of population, viz, 11,854, should be all accredited to 1864 and 1865, for during the two years following the enforcement of the blockade south the population diminished rather than increased.

I have obtained reliable opinions as to the estimates for the last five years given above, and the result has been to indorse them as being as near to the truth as could be obtained.

The increase of wealth of the city is best shown by a comparison of the assessed valuation of the taxable property from year to year. A table is herewith appended showing these amounts from 1860 to 1875. The assessment is made upon a basis of valuation of 80 per cent. I send herewith a printed report of the city auditor for 1874, (the only one which I could procure and the latest one published,) showing the assessments from 1870 to 1874, (see page 52,) together with other matters concerning the financial condition of our city.

The city book-keeper has furnished me with the figures for the following table of assessments:

I.—*Table of assessments of the city of Louisville.*

Years.	Real estate.	Personal.	Merchandise.	Residuary.	Total.	Tax on $100.		State tax.
						City.	Railroad.	
1860	$27,223,128	$462,243	$5,165,250	$4,480,300	$37,330,921	$1 45	$0 25	$0 20
1861	24,883,332	425,420	4,629,600	3,468,650	33,407,002	1 50	25	30
1862	19,798,037	329,537	2,948,675	1,905,030	24,981,279	1 53	25	30
1863	22,725,126	281,454	3,560,000	3,303,790	29,870,370	1 50	35	30
1864	30,540,737	368,575	5,381,225	4,457,108	40,747,637	1 45	.....	30
1865	36,012,434	503,815	9,183,875	6,007,100	51,707,224	1 45	.....	40
1866	45,194,327	612,005	9,998,225	7,129,097	62,933,654	1 59	.....	40
1867	47,927,068	634,915	9,258,749	5,539,100	63,369,832	1 61	35	40
1868	49,212,579	622,772	8,896,125	4,661,600	63,323,076	1 98	.....	30
1869	53,521,300	739,606	9,023,195	.....	63,284,101	1 89	15	30
1870	55,269,437	619,060	8,833,065	6,085,150	70,806,712	2 22	23	45
1871	61,042,130	739,850	8,898,475	5,724,500	76,364,955	2 08	17	45
1872	61,526,580	680,035	8,834,055	6,335,954	77,376,624	2 04	17	45
1873	61,364,731	685,465	9,410,340	6,219,078	77,679,614	2 40	11	45
1874	62,218,922	714,860	9,696,402	5,664,930	78,295,114	.....	.....	.....
1875	.....	.....	.....	.....	75,536,812	.....	.....	.....

II. *Table of assessment previous to* 1860, *from manual city council* 1874.

Year.	Assessment.
1788	£31 5*s.* 6*d.*
1800	$91,188
1810	210,475
1820	1,655,226
1830	4,316,432
1840	13,340,154
1850	13,350,052

In Table I, the first column is devoted to assessed value of real estate.

The column headed "personal" includes jewelry, silver and gold, table-ware, pianos, and other taxable personal property. The estimates under this head fall far short of the true amounts, as a large quantity is never reported.

The merchandise column is intended to represent the total stocks of merchandise, material, &c., on hand in the business-houses on January 10 of each year.

"Residuary" includes notes, bills, bonds, &c., taxable.

The condition of the city on the 1st of January is shown in Mayor Jacob's annual. (See page 50 of reference-book.)

Question 30. Estimated value of the manufactures of Louisville during the year 1875.

Answer. there are no statistics upon this subject, and in the limited time at my disposal I have been unable to get more than a mere outline in answer to the above question.

I present herewith a table compiled from various sources and estimates. It does not claim to be more than a mere estimate not based upon very accurate data. The figures given I believe fully cover the facts. For some of the items given I have the results of personal investigations. From others on which I started to inform myself I have not yet been able to get returns.

From a careful examination of the accompanying pamphlet, entitled "Kentucky and Louisville," with the lights at my disposal, I am led to believe that the results there set forth are in many cases quite largely in advance of the facts. We notice in one or two instances that the same items appear under different heads.

The year for which it reports was a large one with us, but when we remember the object for which it was published, we shall be ready, I think, to overlook, as we shall allow for, the exaggeration produced by enthusiasm.

To the tabular exhibit of the manufactures given I append a very complete and accurate report of the pork business for 1874–'75 and 1875–'76, which is taken from the records of that industry. For further information on the pork subject see reference-book, pages 100 to 103, where the statistics are given for past years.

Attention is here called to the report of the Tanners' Exchange, reference-book, page 93, which gives a full report of that interest for the past year.

Table showing estimated value of Louisville manufactures for 1875.

Kind.	Number.	Capital invested.	Annual product.
Agricultural implements	4	$1,335,000	$1,850,000
Ale, beer, and spirits	33	2,650,000	4,225,000
Bagging	4	369,000	610,000
Bells	4	20,000	35,000
Blank-books, &c	7	825,000	1,000,000
Boilers	4	175,000	325,000
Boots and shoes	8	340,000	500,000
Brick-yards	26	240,000	375,000
Bridges	1	200,000	750,000
Candles and soap	4	300,000	562,000
Clothing, ready-made	6	650,000	1,250,000
Cement	3	1,750,000	2,600,000
Chairs and furniture	14	928,000	1,875,000
Carriages	5	425,000	513,000
Cooperage	9	49,200	200,000
Doors, sash, &c	9	615,000	1,430,000
Flour	5	762,000	1,764,000
Founderies	27	1,860,000	1,950,000
Plate-glass	1	300,000	450,000
Pipe-works	1	300,000	850,000
Picture-frames, show-cases, &c	3	170,000	675,000
Pumps	5	55,000	115,000
Paper-mills	2	300,000	500,000
Pork-packers	20	1,275,000	8,141,000
Mineral oils and lard	3	500,000	775,000
Rolling-mills	2	600,000	642,000
Saw-mills	4	340,000	825,000
Stone and marble works	18	530,000	925,000
Saddle and harness	22	366,000	600,000
Trunks	5	200,000	375,000
Tanneries	12	1,909,000	2,185,000
Tobacco, manufactured	16	1,327,000	4,231,300
Wagons	17	160,000	255,000
Woolen-mills	3	425,000	570,000
White-lead	2	250,000	360,000
Other manufactures	291	3,978,000	6,942,000
Total	600	26,478,000	51,250,300

NOTE.—The year of 1875 has been, as a general rule, a more prosperous one for manufacturers than for merchants at this point; although, of course, the former have felt the effects of the general depression.

Table showing pork statistics, November to March, seasons of 1875 *and* 1876.

	1874–'75.	1875–'76.
Number of hogs killed	273,118	225,719
Average cost, (live,) gross	$7 10	$7 36
Average cost, net	$8 90	$9 20
Average weight per hog ....lbs..	209.27	216.45
Total amount paid	$5,086,943	$4,489,237
Total net weight ....lbs..	57,156,663	48,854,919
Average lard per hog ....lbs..	29 87	31.21
Total weight of lard ....lbs..	8,159,021	7,044,409

CUT MEATS.

Kind.	1874–'75.		1875–'76.	
	Number.	Weight.	Number.	Weight.
Shoulders, salted ....lbs..	545,673	9,294,355	451,345	7,893,210
Full sides, smoked ....lbs..	44,275	2,374,950	17,642	912,456
Clear sides ....lbs..	430,690	17,949,123	354,743	15,164,874
Breakfast bacon ....lbs..	21,751	193,980	23,842	224,691
Mess-pork	.....	*17,960	.....	†15,014
Rump-pork	.....	*1,555	.....	†478
Hams ....lbs..	545,759	8,284,597	451,420	6,509,431

*Pounds. †Barrels.

Question 31. Estimated value of the commerce of Louisville during the year 1875.

Answer. The sources of condensed information on this head are entirely wanting.

The directories contain a few remarks and figures which are probably not very authentic. They give the value of the business for 1872–'73 as $250,000,000; for 1873–'74 as $100,000,000—this last mentioned as the amount of *bona-fide* sales.

The former mentioned year was the one previous to the "financial panic."

All business was active, and commercial, and industrial interests at a maximum.

The past commercial year of 1874–'75 has been one of general depression, made so by the shrinkage in values which it inaugurated, the general failure of or injury to the southern crops, and the general unsettled condition of the financial community.

And whereas the first estimate above given is inflated, the last is probably low enough, and for the commercial year of 1874–'75 the business of Louisville was perhaps in the neighborhood of one hundred and fifty or one hundred and sixty millions.

The capital invested in banks was $9,934,200.

The internal-revenue tax collected from July 1, 1875, to January 8, 1876, was, for the old fifth district, (see Exhibit F for counties composed in this district)—

On whisky	$139,123 40
On tobacco	679,482 37
On beer	34,259 33
On special stamps	6,838 75
On lists, (miscellaneous sources)	30,998 40
Total	890,702 25

The direct imports and duties paid thereon at the custom-house here have been—

Year ending—	Value imported.	Duty paid.
December 31, 1872	$288,939 92	$109,062 11
December 31, 1873	302,794 00	121,288 49
December 31, 1874	415,046 28	158,428 33
December 31, 1875	116,256 00	61,428 93

There are about 6,300 business-houses in the city, and about 600 manufacturing establishments, including, of course, those of small importance.

Question 32. What proportion of the commerce of Louisville do you estimate to be north and south commerce, and what proportion east and west commerce?

By north and south commerce is meant all exchanges between States north of the Ohio River and west of the western boundary of Pennsylvania, and States south of the Ohio River. By east and west commerce is meant all trade at and through Louisville between points west and south of Louisville, and points east of the western boundary of Pennsylvania.

Answer. From tables 1 and 2, appended to question 28, we learn that there were in 1875 shipped over the bridge 76,141 car-loads of freight going north, and 122,569 car-loads of freight going south.

Reducing to pounds, we have—

		Going north.	Coming south.
		Pounds.	*Pounds.*
(A.)	Ohio and Mississippi and Jeffersonville, Madison and Indianapolis Railroads..	1,522,820,000	2,451,380,000
	Louisville, Cincinnati and Lexington Railroads, (see question 18)	173,004,000	150,022,000
	Total	1,695,824,000	2,601,402,000

From the annual report of the Louisville and Nashville Railroad for 1874–'75, (see page 170,) we find that there were shipped over that road—

(1.)

Going north, to—		Going south, from—	
	Pounds.		*Pounds.*
Louisville	23,226,485	Louisville	57,719,487
Cincinnati	27,686,947	Cincinnati	61,490,640
Eastern seaboard cities	77,791,670	Eastern seaboard cities	21,395,246
Other points north of Ohio River	7,271,453	Other points north of Ohio River	19,849,133
Total	135,976,555		160,454,506

The years of the eastern railroads and of the Louisville and Nashville Railroad do not end at the same time; this fact will make no difference.

We have previously estimated (see question 18) that one-fourth of the freight each way, over the bridge and over the Louisville, Cincinnati and Lexington Railroad is through-freight, (*i. e.*, exchanges between Louisville and the Atlantic seaboard.) By extending the estimate we may assume that one-third of the freight each way consists of exchanges between Louisville and the Southwest and States east of the western boundary of Pennsylvania and north of the southern boundary of Pennsylvania.

Operating upon this supposition, we divide the total freight received and shipped over the eastern railroads as follows:

Going north.

		Pounds.
(2)	(*a*) To points east of the western boundary of Pennsylvania	565,274,666
	(*b*) To other points north of the Ohio River	1,130,549,333
	Going south.	
	(*c*) From points east of the western boundary of Pennsylvania	867,134,000
	(*d*) From other points north of the Ohio River	1,734,268,000

Dividing (1) as follows, we have for the Louisville and Nashville Railroad—

Going north.

		Pounds.
(3)	(*e*) To Louisville	23,226,485
	(*f*) To east seaboard	77,791,670
	(*g*) To Cincinnati and other points north of the Ohio River	34,958,400
	Going south.	
	(*h*) From Louisville	57,719,487
	(*i*) From east seaboard	21,395,246
	(*j*) From Cincinnati and other points north of Ohio River	81,339,773

Combining (2) and (3) we have—

Going north.

(*k*)	Shipped to Louisville from the South via Louisville and Nashville Railroad	(*e*) 23,226,485
(*l*)	Shipped to east seaboard through Louisville via Louisville and Nashville Railroad	(*f*) 77,791,670
(*m*)	Shipped from Louisville to points east of western boundary of Pennsylvania via eastern railroads, (*a*) — (*f*)	487,482,996
(*n*)	Shipped to other points north of Ohio River through Louisville via Louisville and Nashville Railroad	(*g*) 34,958,400
(*o*)	Shipped to other points north of Ohio River from and through Louisville via other routes, (*b*) — (*g*)	1,095,590,933

Going south.

(*p*)	Shipped south from Louisville via Louisville and Nashville Railroad.	(*h*) 57,719,487
(*q*)	Shipped south through Louisville from eastern seaboard via Louisville and Nashville Railroad	(*i*) 21,395,246
(*r*)	Shipped to Louisville and south through Louisville via eastern railroads from points east of Western Pennsylvania, (*c*) — (*i*)	845,738,754
(*s*)	Shipped south through Louisville from other points north of Ohio River via Louisville and Nashville Railroad	(*j*) 81,339,773
(*t*)	Shipped to Louisville and south through Louisville via eastern railroads from other points north of Ohio River, (*d*) — (*j*)	1,652,928,227

An inspection of the above schedule shows that (*k*) and (*p*) the shipments from and receipts at Lousville via Louisville and Nashville Railroad cannot properly come under the head of either movement. Items (*l*), (*m*), (*q*), and (*r*) fall under the head of east and west commerce, while (*n*), (*o*), (*s*), and (*t*) belong evidently to north and south commerce. Summing these up, in the aggregate we have—

Items east and west commerce.		*Items north and south commerce.*	
(*l*)	78 million pounds.	(*n*)	35 million pounds.
(*m*)	487 million pounds.	(*o*)	1,096 million pounds.
(*q*)	21 million pounds.	(*s*)	81 million pounds.
(*r*)	846 million pounds.	(*t*)	1,653 million pounds.
Total	1,432 million pounds.	Total	2,865 million pounds.

Hence the ratio of the north and south commerce to the east and west commerce, as shown by this demonstration, for the year 1875, was as two to one by weight.

This ratio must very nearly approximate to the truth, taking values as the basis of the calculation, because whereas it evidently would not answer to derive from the pounds moving east and the pounds moving west a ratio of the value of these two movements, yet as it requires the freight both ways to make one movement either east and west or north and south, we may safely use our result as a ratio of commerce or valuation.

By the definition of the terms, the whole commerce of Louisville must belong to one or the other of these movements, except that which arises from the southern receipts which stop here for consumption, or are converted here and reshipped south without crossing the Ohio River.

Without complete and accurate statistics, it is impossible to determine what ratio this movement bears to the whole commerce.

Allowing, however, that from all avenues it will amount to the total received over the Louisville and Nashville Railroad, or 136,000,000, [see (1),] it is still less than one-tenth of the east and west or smaller movement.

A summary then gives us for north and south movement $\frac{2}{3}$ of whole commerce; east and west movement, $\frac{1}{3}$ of whole commerce; home movement, $\frac{1}{20}$ of whole commerce.

NOTE.—In the foregoing estimate there appear to be the following possible sources of error:

First. Our figures do not include the operations of the Louisville, Paducah and Southwestern, nor the Louisville, New Albany and Chicago Railroads, nor the Ohio River either way, as statistics of these sources were impossible to obtain.

The only probable change which would be produced by their introduction would be to increase somewhat the ratio of the north and south commerce over the east and west commerce.

Second. The proportion of through freight over the eastern railroads to the total amount carried has been taken at one-fourth, (by through freight is denoted exchanges between Louisville and eastern seaboard ports;) and although it is as well founded as any opinion can be, as it is not based on actual figures, it may be in error, but so far as we may judge from its position in the present calculation, we are confirmed in our belief of its correctness.

For example, it shows for the year 1875 [dividing the totals of (A)] see first page of the present discussion, in the proportion of three and one that 424,000,000 pounds were shipped from Louisville to the seaboard and 650,000,000 pounds were received at Louisville from the seaboard. We know that Louisville furnishes and handles the supplies for a very large scope of southern country, yet she does not by any means handle all of the products from this same section. Hence we should infer that her receipts from eastern ports would be larger than her shipments to those ports, which we see is the case from our estimate.

Again, our Louisville and Nashville Railroad summary for 1875 shows, [see (1)] that there were shipped via Louisville and Nashville Railroad, through Louisville to eastern seaboard, 78,000,000, and south through Louisville over Louisville and Nashville Railroad from eastern seaboard 21,000,000. At a casual glance this fact might seem to conflict with the estimate above given, viz, that Louisville's total eastern shipments were 424,000,000 pounds and her receipts 650,000,000 pounds; but we believe this seeming discrepancy to be merely apparent.

Most of the through freight to the East is the product of the west and southwestern country, seeking its market. Of this product, the Louisville and Nashville Railroad brings us a larger proportion than any other one avenue of transportation. Hence, the through eastern freight received over the Louisville and Nashville Railroad should bear a very large ratio to the total eastern shipments, as it does, viz, 78,000,000 out of 424,000,000, or nearly $\frac{1}{5}$.

But our through freights from eastern seaboards are scattered, being consumed at home and furnished to a large area of country to which the Louisville and Nashville Railroad is far less a tributary. Hence the proportion resulting from the western movement should be much less, as it is, viz, 21,000,000 to 650,000,000, or as 1 to 30. Both of these ratios, and especially the last, are under rather than above the correct ratio, because in these tables we lose sight of the through freight either way which stops at Louisville and is afterwards reshipped east or south. The latter item would affect its result much the more; because a far greater proportion of through freight from the East is rehandled at this point before shipping it south than is the case with the other movement.

Our premises being allowed, the results follow, as the steps are mathematical.

Question 33. Which of these movements has grown the faster during the last ten or fifteen years; the north and south movement or the east and west movement, and on which does the commercial prosperity of Louisville chiefly depend?

Answer. Upon the first head we have no statistics of progress to give us an exact ratio. But in answer to that inquiry I should say, unquestionably, that the north and

south movement had developed more rapidly during the time mentioned. The West produces raw material; the East consumes and manufactures or makes it. So long as these relations absolutely obtain, the east and west will be the chief commercial movement of the whole country. But just so soon as the West begins to develop manufactures, a north and south movement is established, which develops chiefly with the western growth and movement of manufactures.

It is essentially during the last fifteen years, since railroads have become general and cheap avenues of transportation, that our western manufactures have sprung into being; and in that time the greater portion of the north and south movement of Louisville commerce has been developed. From the nature of the case, this movement, once established, must be of rapid growth.

Whether the commercial prosperity of Louisville chiefly depends upon the north and south or east and west movement is a matter that admits of two solutions. Louisville is, and always has been, a large commercial center. She has built up a distributing point between the far East and great South. Such commercial prosperity, viz. the result of handling and distributing, of course depended chiefly upon the east and west movement. But the growth of our city henceforth in that respect must be reduced if not annihilated; for railroads are constantly narrowing the influence of all cities which may have been "distributing monopolies," (for particular sections of country,) as such.

The future growth, then, of Louisville must be the result of her efforts to become a manufacturing center, rather than simply a center of distribution. At present, although she has many manufactures and very many more advantages for manufacturing, yet she is not so largely manufacturing as commercial. Therefore, while her present prosperity is, perhaps, more largely dependent upon the east and west movement, her future growth and commercial importance are more intimately connected with the north and south movement.

Question 34. What efforts are now being made to secure a through-line from Louisville to the Atlantic seaboard in connection with the Chesapeake and Ohio Railroad; and please mention the connecting links of this line and the progress being made towards the completion of the enterprise?

Answer. No efforts whatever are being or ever have been made at this point. The missing link of this line is from Mount Sterling, Ky., to Huntington, W. Va., about 105 miles. The connecting links of the line are the old Louisville and Lexington Railroad extended to Mount Sterling; Mount Sterling to Huntington wanting, (see above;) Chesapeake and Ohio from Huntington, W. Va., to Richmond, and thence to Norfolk, Va. (See Poor's Manual of Railroads.)

(NOTE.—The Chesapeake and Ohio claims to have built the Mount Sterling extension till the gap has been reduced to 28 or 30 miles, but this is not so.)

SCHEDULE I.—*Flour and grain received at and shipped from Louisville,* 1865 *to* 1875.

TABLE 1.—FLOUR AND GRAIN RECEIVED AT LOUISVILLE.

Year.	Barley.	Corn.	Oats.	Rye.	Wheat.	Total grain	Flour.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*
1865-'66	178, 670	558, 510	282, 284	6, 300	378, 936	1, 404, 700	102, 630
1866-'67	254, 480	1, 089, 652	324, 830	68, 178	475, 614	2, 212, 754	195, 296
1867-'68	118, 985	1, 040, 004	375, 480	60, 709	424, 592	2, 019, 770	114, 402
1868-'69	87, 980	643, 687	119, 982	166, 104	531, 356	1, 549, 109	104, 047
1869-'70	53, 902	247, 617	136, 522	79, 306	725, 522	1, 242, 869	126, 198
1870	33, 324	174, 910	66, 824	25, 864	206, 258	507, 180	42, 045
1870-'71	74, 160	236, 063	106, 480	46, 958	542, 900	1, 006, 561	116, 740
1871-'72	130, 172	538, 336	173, 614	132, 514	441, 042	1, 415, 678	261, 156
1872-'73	101, 946	348, 894	169, 728	70, 398	478, 240	1, 169, 206	180, 879

TABLE 2.—FLOUR AND GRAIN SHIPPED FROM LOUISVILLE.

1865-'66	28, 225	190, 825	60, 783	3, 030	76, 747	359, 610	110, 627
1866-'67	30, 600	561, 310	80, 704	13, 059	117, 477	836, 150	145, 792
1867-'68	33, 842	323, 178	92, 640	23, 752	102, 221	575, 633	97, 050
1868-'69	6, 908	214, 184	90, 984	84, 798	106, 932	503, 806	110, 636
1869-'70	7, 514	95, 865	46, 050	16, 316	206, 258	372, 003	117, 787
1870	10, 296	81, 220	33, 358	7, 828	90, 720	223, 422	69, 838
1870-'71	12, 502	118, 610	40, 776	11, 354	77, 232	260, 474	175, 609
1871-'72	27, 046	255, 105	77, 860	58, 084	142, 764	560, 859	206, 473
1872-'73	12, 084	142, 348	82, 186	9, 644	93, 042	339, 304	206, 378

NOTE.—In the foregoing tables the figures are taken from the board of trade records, and the years are the same as those on tables of imports and exports of that body. (See Exhibit B.)

TABLE 3.—FLOUR AND GRAIN RECEIVED BY LOUISVILLE AND NASHVILLE RAILROAD.

Year.*	Wheat.	Corn.	Other grain.	Total grain.	Flour.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*
1866–'67	102, 305	31, 681	33, 963	167, 949	1, 428
1867–'68	236, 161	150, 882	59, 505	446, 548	9, 722
1868–'69	283, 580	142, 812	163, 932	590, 324	19, 253
1869–'70	488, 903	19, 629	67, 126	575, 658	14, 114
1870–'71	453, 682	2, 676	70, 982	527, 240	10, 256
1871–'72	28, 409	4, 561	35, 283	68, 253	321
1872–'73	443, 576	2, 270	64, 066	509, 912	24, 633
1873–'74	141, 249	5, 575	16, 838	163, 662	6, 718
1874–'75	205, 335	1, 212	9, 902	215, 749	7, 503

TABLE 4.—FLOUR AND GRAIN SHIPPED BY LOUISVILLE AND NASHVILLE RAILROAD.

1866–'67	20, 420	344, 714	43, 245	409, 379	64, 454
1867–'68	9, 102	50, 041	45, 184	104, 332	28, 432
1868–'69	16, 245	47, 745	30, 344	94, 334	47, 038
1869–'70	21, 934	302, 864	109, 812	434, 610	106, 541
1870–'71	4, 372	107, 230	58, 134	169, 736	102, 493
1871–'72	98, 319	677, 304	196, 630	972, 253	201, 722
1872–'73	34, 723	391, 459	168, 403	594, 585	119, 723
1873–'74	38, 596	765, 300	120, 788	924, 684	133, 857
1874–'75	35, 878	958, 673	275, 484	1, 271, 035	147, 074

* The years begin July 1.

In tables 1 and 2 the imports and exports of grain have been deduced from the board of trade reports. The reduction to bushels from those reports has been made by allowing for sacks of wheat, rye, oats, and barley, two bushels each, and for corn sacks one bushel.

An examination of these tables and a comparison with tables 3 and 4, (Louisville and Nashville Railroad statistics,) reveals the fact that the grain figures as furnished by the board are unreliable. For example: We learn from table 2 that in the year 1871–'72 the total wheat shipped was 255,105 bushels.

Table 4 shows 677,304 bushels shipped over the Nashville Road alone. To be sure the years do not end at the same time, but the two months of July and August will not account for the difference, especially when we notice the records for the year following. Again, a comparison of the different printed reports of the board of trade will show other discrepancies.

For example: In the board of trade report for 1869, page 127, the exports of barley for 1868 amount to 16,921 sacks, (or bags.) This item is reported (on page 64, published report of board of trade for 1867–'68) as 42,763 bushels, where it first appears. The imports of barley (page 127, report for 1868–'69) for the same year (1867–'68) are quoted as 36,995 bags or sacks. The same item for the same year is quoted in the previous year's report (page 64) as 118,985 bushels. We can hardly reconcile these quotations except on the theory of a sack of varying capacity (2½ to 3½ bushels) to be used in one way with imports and another with exports.

These things show the difficulties one meets with in compiling statistics from Louisville data, and are mentioned as a warning against tables 1 and 2, the only full statistics we possess upon the desired point of information.

Tables 3 and 4 are presented with more confidence, although they cover but part of the ground. They are accurate as far as they go. From interviews with the grain-men I learn that about 3,408,000 bushels of grain were handled at Louisville during 1875.

Schedule IV. Quantity of grain, live animals, and provisions shipped from Louisville by river into States south of the Ohio River during 1874.

Answer. There are no records of river shipments. (See remarks under question 2.) The records of the board of trade cease with November, 1873. Neither the grain-dealers nor the stock-yards keep any records of their yearly transactions, so that from neither source is this answer obtainable. An approximation might be collated in from four to six months. The provision-dealers are so numerous and so many changes have taken place since 1874 that practically it would be impossible to obtain the desired information.

Schedule V. Statement of average rail-rates for the transport of merchandise from Louisville to four important points in the South not on any navigable river or affected by water transportation during each month of 1875.

Answer. Points selected: Atlanta, Ga., Meridian, Miss., Jackson, Tenn., and Dallas, Texas.

TABLE 1.—*Rates from Louisville.*

Month.	To Atlanta, Ga.				Jackson, Tenn.				Meridian, Miss.			
	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
January to April	109	95	81	49	198	152	117	97	80	66	52	43
May	109	95	81	49	182	148	118	95	87	70	57	45
June to November	109	95	81	49	189	144	111	90	80	66	52	43
December	109	95	81	49	198	153	120	97	94	78	66	51

TABLE 2.—*Rates from Louisville to Dallas, Tex.*

Month.	Via Louisville and Nashville and Great Southern Railroad.				Via Jeffersonville Madison and Indianapolis Railroad.				Via Ohio and Mississippi Railroad.			
	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
January and February	254	219	184	139	229	184	154	124	235	190	160	130
March	229	184	154	124	229	184	154	124	235	190	160	130
April to June	235	190	160	130	229	184	154	124	235	190	160	130
July to December	229	184	154	124	*235	190	160	130	235	190	160	130

*The Jeffersonville, Madison and Indianapolis rates to Dallas, given in the lower line of the table, were only for December.

The rates given in table 1 are taken from the published tariffs of the Louisville and Nashville Road and its connections. A copy of each tariff of this road for 1875 is herewith inclosed. (See Exhibit E.) Meridian is taken because although not a large point, it is an important one, being in the center of a large cotton-producing region and at the junction of three railroads. It has four rail outlets, and ships heavily of the "fleecy staple."

From the tariffs mentioned above the rates to other southern points may be determined and compared, if desirable.

To Atlanta we have but one outlet, viz, the Louisville and Nashville Railroad. The Louisville, Paducah and Southwestern Railroad takes freight for Jackson, Tenn., and Meridian, Miss., but it adheres to the rates made by the Louisville and Nashville and Great Southern Railroad, so that practically we have no competition to these points.

To Dallas, Tex., we may ship via Louisville and Nashville and connections to New Orleans, Morgan Line to Galveston, Galveston, Houston and Henderson Railroad to Houston, and thence via Houston and Texas Central or International and Great Northern and Texas Pacific to Dallas, or via Ohio and Mississippi or Jeffersonville, Madison and Indianapolis and Vandalia to Saint Louis, thence Missouri, Kansas and Texas and Houston and Texas Central, or Saint Louis and Iron Mountain and Texas Pacific to Dallas. Even this competition gives us but a slight difference in rates, as the second able shows.

APPENDIX No. 17.

THE LAW OF THE STATE OF MASSACHUSETTS TO SECURE PUBLICITY AND UNIFORMITY IN RAILROAD ACCOUNTS.

[CHAP. 185.]

AN ACT to secure greater publicity and uniformity in the accounts of railroad corporations.

Be it enacted, &c., as follows:

SECTION 1. The board of railroad commissioners shall, before the first day of September, eighteen hundred and seventy-six, prescribe a system upon which the books and accounts of corporations operating railroads or street-railways shall be kept in a uniform manner.

SEC. 2. It shall be the duty of the board of railroad commissioners, from time to time in each year, to examine the books and accounts of all corporations operating railroads, or street-railways, to see that they are kept on the plan prescribed under authority of the preceding section; and statements of the doings and financial condition of the several corporations shall be prepared and published at such times as said board shall deem expedient.

SEC. 3. The board of railroad commissioners is hereby authorized to employ, at a compensation not exceeding twenty-five hundred dollars a year, to be paid as provided in sections seventeen and eighteen of chapter three hundred and seventy-two of the acts of the year eighteen hundred and seventy-four, a person skilled in the methods of railroad accounting, whose duty it shall be, under the direction of said board, to supervise the method by which the accounts of corporations operating railroads, or street-railways, are kept.

SEC. 4. On the application in writing of a director, or of any person or persons owning one-fiftieth part of the entire paid-in capital stock of any corporation operating a railroad, or street-railway, or the bonds or other evidences of indebtedness of such corporation equal in amount to one-fiftieth part of its paid-in capital stock, the board of railroad commissioners shall make an examination into the books and financial condition of said corporation, and shall cause the same to be published in one or more daily papers in the city of Boston.

SEC. 5. The board of railroad commissioners shall further have, at all times, access to the list of stockholders of every corporation operating a railroad, or street-railway, and may, in their discretion, at any time, cause the same to be copied, in whole or in part, for their own information or for the information of persons owning stock in such corporation.

SEC. 6. A corporation refusing to submit its books to the examination of the board of railroad commissioners, or neglecting to keep its accounts in the method prescribed by said board under authority of this act, shall be liable to the penalties provided in section one hundred and seventy-four of said chapter three hundred and seventy-two of the acts of the year eighteen hundred and seventy-four, in the case of the neglect or refusal to make a report or return.

Approved April 26, 1876.

APPENDIX No. 18.

DECISION OF THE SUPREME COURT OF THE UNITED STATES IN THE SO-CALLED GRANGER CASES, MARCH 1, 1877.

The Supreme Court of the United States, on March 1, decided the so-called Granger cases, the first one being that of Ira Y. Munn and George L. Scott, plaintiffs in error, *vs.* The People of the State of Illinois, in error to the supreme court of the State of Illinois.

Mr. Justice Waite delivered the opinion of the court:

"The question to be determined in this case is whether the general assembly of Illinois can, under the limitations upon the legislative power of the States imposed by the Constitution of the United States, fix by law the maximum of charges for the storage of grain in warehouses in Chicago and other places in the State having not less than 100,000 inhabitants, in which grain is stored in bulk, and in which the grain of different owners is mixed together, or in which grain is stored in such manner that the identity of the different lots or parcels cannot be accurately preserved. It is claimed that such a law is repugnant—

"First. To that part of section 8, article 1, of the Constitution of the United States which confers upon Congress the power 'to regulate commerce with foreign nations and among the several States.'

"Second. To that part of section 9 of the same article, which provides that 'no preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another.'

"Third. To that part of the 14th amendment which ordains that no State shall 'deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.'

"We will consider the last of these objections first. Every statute is presumed to be constitutional. The courts ought not to declare one to be unconstitutional unless it is clearly so. If there is doubt, the expressed will of the legislature should be sustained. The Constitution contains no definition of the word 'deprive' as used in the 14th amendment.

"THE EFFECT OF USAGE.

"To determine its signification, therefore, it is necessary to ascertain the effect which usage has given it when employed in the same or like connection. While this provision of the amendment is new in the Constitution of the United States as a limitation upon the power of the States, it is old as a principle of civilized government. It is found in Magna Charta and, in substance, if not in form, in nearly or quite all the constitutions that have been from time to time adopted by the several States of the Union. By the fifth amendment it was introduced into the Constitution of the United States as a limitation upon the powers of the National Government, and by the fourteenth as a guarantee against any encroachment upon an acknowledged right of citizenship by the legislatures of the States. When the people of the United Colonies separated from Great Britain, they changed the form but not the substance of their government. They retained for the purposes of government all the powers of the British Parliament, and through their State constitutions or other forms of social compact, undertook to give practical effect to such as they deemed necessary for the common good and the security of life and property. All the powers which they retained they committed to their respective States, unless in express terms or by implication reserved to themselves. Subsequently, when it was found necessary to establish a national government for national purposes, a part of the powers of the States and of the peoples of the States was granted to the United States and the people of the United States. This grant operated as a further limitation upon the powers of the States, so that now the governments of the States possess all the powers of the Parliament of England, except such as have been delegated to the United States or reserved by the people. The reservations by the people are shown in the prohibitions of the constitutions. When one becomes a member of a society he necessarily parts with some rights or privileges which, as an individual, not affected by his relations to others, he might retain.

"WHAT A 'BODY POLITIC' IS.

"'A body politic,' as aptly defined in the preamble of the constitution of Massachusetts, is a social compact, by which the whole people covenants with each citizen, and each citizen with the whole people, that all shall be governed by certain laws for the common good. This does not confer power upon the whole people to control rights which are purely and exclusively private, (Thorpe *vs.* the R. and B. Railroad Company, 27 Vt., 143.) but it does authorize the establishment of laws requiring each citizen to so conduct himself and so use his own property as not unnecessarily to injure another. This is the very essence of government, and has found expression in the maxim, *sic u'ere tuo ut alienum non lædas.* From this source came the police powers, which, as was said by Chief-Justice Taney in the license cases, (5 How., 583,) 'are nothing more nor less than the powers of government inherent in every sovereignty. * * * That is to say, * * * the power to govern men and things. Under these powers the government regulates the conduct of its citizens, one toward another, and the manner in which each shall use his own property when such regulation becomes necessary for the public good. In their exercise it has been customary in England from time immemorial, and in this country from its first colonization, to regulate ferries, common carriers, hackmen, bakers, millers, wharfingers, innkeepers, &c., and in so doing to fix a maximum of charge to be made for services rendered, accommodations furnished, and articles sold. To this day statutes are to be found in many of the States upon some or all these subjects, and we think it has never yet been successfully contended that such legislation came within any of the constitutional prohibitions against interference with private property. With the fifth amendment in force Congress in 1870 conferred power upon the city of Washington to regulate * * * the rates of wharfage at private wharves, * * * the sweeping of chimneys and to fix the rates of fees therefor, * * * and the weight and quality of bread, (3 Statutes, 587, section 7;) and in 1848 to make all necessary regulations respecting hackney carriages and the rates of fare of the same, and the rates of hauling by cartmen, wagoners, carmen, and draymen, and the rates of commission of auctioneers," (9 Statutes, 224, section 2.) From this it is apparent that down to the time of the adoption of the fourteenth amendment it was supposed that the statutes regulating the use, or even the price of the use, of private property necessarily deprived an owner of his property without due process of law. Under some circumstances they may, but not under all. The amendment does not change the law in this particular. It simply prevents the States from doing that which will operate as such a deprivation.

"WHERE THE POWER OF THE REGULATION RESTS.

"This brings us up to inquire as to the principles upon which this power of regulation rests, in order that we may determine what is within and what without its operative effect. Looking, then, to common law, from whence come the rights which the Constitution protects? We find that when private property is affected with a public interest it ceases to be *juris privati* only. This was said by Lord Chief-Justice Hale more than two hundred years ago in his treatise "De Portibus Maris," and has been accepted without objection as an essential element in the law of property ever since. Property does become clothed with a public interest when used in a manner to make it of public consequence and affect the community at large. When, therefore, one devotes his property to a use in which the public has an interest he in effect grants to the public an interests in that use, and must submit to be controlled by the public for the common good to the extent of the interest he has thus created. He may withdraw his grant by discontinuing the use, but so long as he maintains the use he must submit to the control."

After quoting Lord Hale as to ferries, wharves, and wharfingers, and the decision of the supreme court of Alabama, because the court thought they found in them the principle which supports the legislation they were examining, the opinion continues as follows:

"Enough has already been said to show that when private property is devoted to a public use it is subject to public regulation. It remains only to ascertain whether the warehouses of these plaintiffs in error and the business which is carried on there come within the operation of this principle. For this purpose we accept as true the statements of fact contained in the elaborate brief of one of the counsel of the plaintiffs in error.

"WHAT THE PLAINTIFFS' STATEMENTS SHOW.

"From these it appears that the great producing region of the West and Northwest sends its grain by water and rail to Chicago, where the greater part of it is shipped by vessel for transportation to the seaboard by the Great Lakes, and some of it is forwarded by railway to the eastern ports. * * * Vessels to some extent are

loaded in the Chicago Harbor and sailed through the Saint Lawrence directly to Europe. * * * The quantity (of grain) received in Chicago has made it the greatest grain-market in the world. This business has created a demand for means by which the immense quantity of grain can be handled or stored, and these have been found in grain warehouses which are commonly called elevators because the grain is elevated from the boat or car by machinery operated by steam into the bins prepared for its reception, and elevated from the bins by a like process into the vessel or car which is to carry it on. * * * In this way the largest traffic between the citizens of the country north and west of Chicago and the citizens of the country lying on the Atlantic coast north of Washington, is in grain which passes through the elevators of Chicago. In this way the trade in grain is carried on by the inhabitants of seven or eight of the great States of the West with four or five of the States lying on the sea-shore, and forms the largest part of interstate commerce in these States. The grain elevators or warehouses in Chicago are immense structures, holding from 300,000 to 1,000,000 bushels at one time, according to size. They are divided into bins of large capacity and great strength. * * * They are located with the river-harbor on one side and the railway-track on the other, and the grain is run through them from car to vessel or boat to car, as may be demanded in the course of business. It has been found impossible to preserve the owners' grain separate, and this has given rise to a system of inspection and grading by which the grain of different owners is mixed and receipts issued for the number of bushels which are negotiable and redeemable in like kind upon demand. This mode of conducting the business was inaugurated more than twenty years ago, and has grown to immense proportions. The railroads have found it impracticable to own such elevators, and public policy forbids the transaction of such business by the carrier. The ownership has, therefore, been by private individuals, who have embarked their capital and devoted their industry to such business as a private pursuit. In this connection it must also be borne in mind that, although in 1874 there were in Chicago fourteen warehouses adapted to this particular business and owned by about thirty persons, nine business firms controlled them, and that the prices charged and received for storage were such as have been from year to year agreed upon and established by the different elevators or warehouses in the city of Chicago, and which rates have been annually published in one or more newspapers printed in said city in the month of January in each year, as the established rates for the year then next ensuing such publication. Thus it is apparent that all the elevating facilities through which these vast productions of seven or eight great States of the West must pass on the way to four or five of the States on the sea-shore, may be a virtual monopoly. Under such circumstances it is difficult to see why, if the common carrier, or the miller, or the ferryman, or the innkeeper, or the wharfinger, or the hackney coachman pursues a public employment and exercises a sort of public office, these plaintiffs in error do not. They stand, to use again the language of their counsel, in the very 'gateway of commerce,' and take toll from all who pass. Their business most certainly 'tends to a common charge, and is become a thing of public interest and use.' Every bushel of grain for its passage 'pays a toll, which is a common charge;' and, therefore, according to Lord Hale, every such warehouseman ought to be under public regulation, viz, that he take but reasonable toll. Certainly, if any business can be clothed with a public interest, and cease to be *juris privati* only, this has been. It may not be made so by the operation of the constitution of Illinois or this statute, but it is by the facts.

"WHAT THE ILLINOIS PEOPLE DID.

"We also are not permitted to overlook the fact that, for some reason, the people of Illinois, when they revised their constitution in 1870, saw fit to make it the duty of the general assembly to pass laws 'for the protection of producers, shippers, and receivers of grain and produce,' (article 13, section 7,) and by section 5 of the same article to require all railroad companies receiving and transporting grain in bulk or otherwise to deliver the same at any elevator to which it might be consigned that could be reached by any track that was or could be used by such company; and that all railroad companies should permit connections to be made with their tracks, so that any public warehouse, &c., might be reached by the cars on their railroads. This indicates very clearly that during the twenty years in which this peculiar business has been assuming its present 'immense proportions' something had occurred which led the whole body of the people to suppose that remedies such as are usually employed to prevent abuses by virtual monopolies might not be inappropriate here. For our purposes we must assume that if a state of facts could exist that would justify such legislation, it actually did exist when the statute now under consideration was passed. For us the question is one of power, not of expediency. If no state of circumstances could exist to justify such a statute, then we may declare this one void because in excess of the legislative power of the State: but if it could, we must presume it did. Of the propriety of legislative interference within the scope of legislative power the legis-

lature is the exclusive judge. Neither is it a matter of any moment that no precedent can be found for a statute precisely like this. It is conceded that the business is one of recent origin; that its growth has been rapid, and that it is already of great importance; and it must also be conceded that it is a business in which the whole public has a direct and positive interest. It presents, therefore, a case for the application of a long-known and well-established principle in social science, and this statute simply extends the law so as to meet this new development of commercial progress. There is no attempt to compel these owners to grant the public an interest in their property, but to declare their obligations if they use it in this particular manner. It matters not in this case that the plaintiffs in error had built their warehouses and established their business before the regulations complained of were adopted. What they did was from the beginning subject to the power of the body politic to require them to conform to such regulations as might be established by the proper authorities for the common good. They entered upon their business and provided themselves with the means to carry it on subject to this condition. If they did not wish to submit themselves to such interference they should not have clothed the public with an interest in their concerns. The same principle applies to them that does to the proprietor of a hackney carriage, and as to him it has never been supposed that he was exempt from regulating statutes or ordinances because he had purchased his horses and carriage and established his business before the statute or the ordinance was adopted.

"THE POWER TO REGULATE.

"It is insisted, however, that the owner of the property is entitled to a reasonable compensation for its use, even though it be clothed with a public interest, and that what is reasonable is a judicial and not a legislative question. As has already been shown, the practice has been otherwise. In countries where the common law prevails it has been customary from time immemorial for the legislature to declare what shall be a reasonable compensation under such circumstances; or, perhaps more properly speaking, to fix a maximum beyond which any charge made would be unreasonable. Undoubtedly in mere private contracts relating to matters in which the public have no interest, what is reasonable must be ascertained judicially. But this is because the legislature has no control over such a contract. So, too, in matters which do affect the public interest, and as to which legislative control may be exercised, if there are no statutory regulations upon the subject, the courts must determine what is reasonable. The controlling act is the power to regulate at all. If that exists, the right to establish the maximum of charge as one of the means of regulation is implied. In fact, the common-law rule, which requires the charge to be reasonable, is itself a regulation as to price. Without it the owner could make his rates at will and compel the public to yield to his terms or forego the use. But a mere common-law regulation of trade or business may be changed by statute. A person has no property, no vested interest in any rule of the common law. That is only one of the forms of municipal law, and is no more sacred than any other. Rights of property which have been created by the common law cannot be taken away without due process, but the law itself, as a rule of conduct, may be changed at the will, or even at the whim, of the legislature, unless prevented by constitutional limitations. Indeed, the great office of statutes is to remedy defects in the common law as they are developed, and to adapt it to the changes of time and circumstances. To limit the rate of charge for services rendered in a public employment, or for the use of property in which the public has an interest, is only changing a regulation which existed before. It establishes no new principle in the law, but only gives a new effect to an old one. We know that this is a power which may be abused, but that is no argument against its existence. For protection against abuses by legislatures the people must resort to the polls, not to the courts. After what has already been said it is unnecessary to refer at length to the effect of the other provision of the fourteenth amendment, which is relied upon—viz, that no State shall 'deny to any person within its jurisdiction the equal protection of the laws.' Certainly it cannot be claimed that this prevents the State from regulating the fare of hackmen or the charges of draymen in Chicago, unless it does the same thing in every other place within its jurisdiction. But, as has been seen, the power to regulate the business of warehouses depends upon the same principle as the power to regulate hackmen and draymen, and what cannot be done in the one case in this particular cannot be done in the other.

"THE POWER OF CONGRESS.

"We come now to consider the effect upon this statute of the power of Congress to regulate commerce. It was very properly said in the case of the State tax on railway gross receipts, (15 Wall., 293,) that 'it is not everything that affects commerce that amounts to a regulation of it within the meaning of the Constitution.' The ware

houses of these plaintiffs in error are situated, and their business carried on exclusively within the limits of the State of Illinois. They are used as instruments by those engaged in State as well as those engaged in interstate commerce, but they are no more necessarily a part of commerce itself than the dray or cart by which, but for them, grain would be transferred from one railroad station to another. Incidentally they may become connected with an interstate commerce, but not necessarily so. Their regulation is a thing of domestic concern, and certainly, until Congress acts in reference to their interstate relations, the State may exercise all the powers of government over them, even though in so doing it may indirectly operate upon commerce outside its immediate jurisdiction. We do not say that a case may not arise in which it will be found that a State, under the form of regulating its own affairs, has encroached upon the exclusive domain of Congress in respect to interstate commerce, but we do say that, upon the facts as they are presented to us in this record, that has not been done.

"THE QUESTION OF REFERENCE.

"The remaining objection—to wit, that the statute in its present form is repugnant to section 9, article 1, of the Constitution of the United States, because it gives preference to the ports of one State over those of another—may be disposed by the single remark that this provision operates only as a limitation of the powers of Congress, and in no respect affects the States in the regulation of their domestic affairs. We conclude, therefore, that the statute in question is not repugnant to the Constitution of the United States, and that there is no error in the judgment.

"In passing upon this case we have not been unmindful of the vast importance of the questions involved. This and cases of a kindred character were argued before us more than a year ago by the most eminent counsel, and in a manner worthy of their well-earned reputations. We have kept the case long under advisement in order that the decision might be the result of our mature deliberations.

"The judgment is affirmed."

APPENDIX No. 19.

Statement showing the number of bushels of wheat (including wheat-flour) exported from the United States from 1830 *to* 1876.

Year.	COUNTRIES TO WHICH EXPORTED.						
	Great Britain and Ireland.	Canada and other British possessions in North America.	West Indies and Central American States.	Brazil.	France.	All other countries and ports.	Total.
1830	1,499,856	686,452	754,880	885,312	254,655	1,487,587	5,568,752
1840	3,410,104	3,012,206	2,019,840	890,991	332,762	593,757	10,259,610
1850	1,980,892	1,375,253	1,549,866	1,316,088	.....	621,078	6,843,177
1860	3,765,017	4,899,810	2,209,640	2,259,558	28,599	2,804,711	15,907,335
1861	35,441,987	7,106,293	2,142,197	1,640,754	1,789,196	2,624,532	50,694,959
1862	32,983,012	7,812,330	2,425,628	1,679,859	10,180,160	4,171,781	59,258,770
1863	35,400,971	10,924,143	2,828,429	1,839,690	500,066	4,422,368	55,915,661
1864	22,487,892	8,013,480	3,191,936	1,835,883	363,114	3,797,468	39,689,773
1865	7,623,579	6,628,949	3,107,501	1,650,780	42,340	2,604,442	21,657,591
1866	2,582,806	5,484,029	2,174,472	1,332,648	360	3,828,613	15,402,828
1867	5,208,960	2,097,790	1,583,872	751,285	41,436	2,308,545	11,996,888
1868	14,549,623	4,711,906	2,408,703	1,114,402	314,799	2,185,369	25,284,802
1869	15,198,420	5,645,332	2,931,741	1,738,814	37,544	2,949,303	28,501,264
1870	33,137,888	8,654,303	3,435,344	1,692,976	1,166,856	4,071,746	52,159,113
1871	28,012,329	12,340,967	3,754,029	2,050,528	769,107	3,819,139	50,747,090
1872	20,495,859	6,096,938	3,773,858	1,719,972	1,430,799	4,221,061	37,738,487
1873	34,173,530	6,728,899	1,441,938	1,840,716	140	11,822,754	50,734,672
1874	59,705,706	9,245,139	1,899,891	2,396,205	2,256,036	13,981,374	89,463,351
1875	49,597,962	5,755,999	1,725,293	2,699,255	131,599	11,116,545	70,926,253
1876	48,932,577	8,231,842	2,490,824	2,680,900	521,136	11,923,483	74,770,682

APPENDIX No. 20.

Statement showing the number of bushels of corn (including corn-meal) exported from the United States from 1850 *to* 1876.

Year.	COUNTRIES TO WHICH EXPORTED.						
	Great Britain and Ireland.	Canada and other British possessions in North America.	West Indies and Central America.	Germany.	France.	All other countries.	Total.
1850	23, 831, 504	270, 727	1, 656, 508	.....	.....	1, 659, 397	27, 418, 136
1860	1, 945, 129	1, 247, 701	795, 557	115, 774	20	378, 519	4, 482, 700
1861	8, 138, 866	2, 178, 576	878, 699	98, 730	21, 060	245, 565	11, 491, 496
1862	14, 485, 515	3, 648, 163	1, 100, 205	43, 784	277, 745	363, 777	19, 919, 189
1863	10, 793, 027	4, 719, 689	955, 937	45, 761	73	636, 781	17, 151, 268
1864	2, 253, 125	1, 500, 563	946, 967	4, 729	30	440, 708	5, 146, 122
1865	765, 205	1, 662, 462	886, 128	12, 318	.....	178, 289	3, 610, 402
1866	9, 910, 880	3, 181, 684	1, 034, 877	39, 761	.....	98, 549	14, 365, 751
1867	12, 205, 784	2, 726, 138	827, 046	22, 720	.....	245, 259	16, 026, 947
1868	8, 712, 236	2, 654, 442	874, 287	44, 201	35, 426	172, 930	12, 493, 522
1869	4, 274, 807	2, 673, 016	915, 460	120, 451	54, 889	21, 564	8, 060, 187
1870	66, 352	888, 626	968, 611	42, 570	237	174, 091	2, 140, 487
1871	5, 910, 325	3, 247, 881	1, 110, 493	113, 728	77, 771	213, 355	10, 673, 553
1872	25, 786, 359	7, 913, 582	834, 094	737, 014	161, 520	294, 421	35, 726, 990
1873	29, 339, 534	8, 658, 605	872, 977	363, 150	134, 935	1, 188, 284	40, 557, 485
1874	26, 299, 323	5, 348, 758	941, 734	825, 624	452, 951	566, 040	34, 434, 330
1875	13, 407, 432	3, 292, 780	671, 836	957, 322	346, 456	1, 379, 554	20, 055, 340
1876	42, 452, 496	4, 652, 690	504, 836	741, 216	246, 629	2, 310, 665	50, 910, 532

APPENDIX No. 21.

Statement showing the number of bushels of wheat (including wheat-flour) imported into the United Kingdom from 1862 to 1874, inclusive.

[Compiled from the Reports of Trade and Navigation of Great Britain.]

Countries whence imported.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
United States*	49, 765, 411	27, 904, 204	22, 230, 725	3, 783, 798	1, 935, 790	11, 063, 244	14, 096, 868	34, 937, 966	34, 458, 524	36, 228, 460	22, 010, 833	39, 363, 794	44, 836, 110
Russia	10, 617, 264	8, 371, 024	9, 555, 903	15, 108, 574	17, 138, 674	26, 444, 683	18, 766, 752	17, 149, 507	19, 276, 776	29, 287, 898	33, 486, 089	15, 992, 781	9, 542, 767
Germany	14, 140, 393	10, 115, 521	12, 680, 854	13, 374, 847	12, 557, 936	14, 508, 529	13, 428, 698	14, 616, 968	8, 332, 879	7, 949, 815	9, 676, 055	3, 591, 955	5, 105, 053
Egypt	6, 072, 288	4, 282, 330	684, 820	.....	.....	2, 709, 978	6, 043, 108	1, 904, 539	195, 906	1, 674, 616	4, 368, 423	2, 102, 050	489, 900
Turkey	2, 243, 672	521, 824	644, 409	720, 798	722, 870	4, 874, 676	5, 531, 861	5, 063, 135	1, 433, 877	1, 544, 228	1, 043, 482	1, 184, 020	2, 596, 143
Wallachia and Moldavia	876, 872	244, 644	238, 762	331, 014	263, 548	1, 011, 776	2, 494, 063	1, 843, 164	247, 113	1, 109, 698	496, 837	207, 566	89, 113
Chili	642, 529	.....	356, 311	317, 076	638, 397	3, 916, 222	2, 758, 067	1, 083, 319	1, 200, 913	1, 101, 240	3, 132, 095	2, 624, 573	3, 210, 760
Australia	347, 402	38, 886	.....	.....	.....	1, 584, 602	361, 298	495, 367	172, 931	690, 156	1, 038, 203	3, 001, 468	2, 050, 223
Denmark	1, 162, 704	1, 095, 401	1, 448, 859	1, 283, 824	1, 050, 947	1, 054, 597	1, 525, 388	1, 455, 782	1, 083, 121	547, 939	1, 141, 061	502, 930	313, 918
France	3, 642, 107	3, 464, 127	5, 328, 255	11, 309, 949	14, 977, 256	3, 996, 221	1, 580, 810	4, 019, 588	1, 978, 889	340, 222	8, 500, 394	1, 950, 436	500, 495
Austria	1, 658, 183	207, 454	68, 006	1, 149, 174	2, 596, 413	.....	.....	.....	.....	1, 560, 988	853, 603	19, 216	3, 895
India	.....	.....	.....	.....	.....	.....	301, 571	.....	.....	410, 709	292, 441	.....	.....
Spain	591, 495	.....	.....	230, 274	1, 611, 920	845, 001	.....	.....	.....	.....	1, 200, 429	1, 118, 913	298, 635
Italy	.....	.....	.....	.....	215, 583	427, 972	600, 941	.....	.....	.....	1, 002, 854	250, 540	13, 000
All other countries	810, 455	592, 539	592, 539	611, 967	1, 117, 789	617, 817	655, 192	999, 837	510, 489	263, 526	635, 207	715, 950	325, 730
Total	92, 570, 775	57, 157, 611	53, 829, 447	48, 241, 295	54, 827, 139	74, 055, 321	68, 144, 617	82, 969, 172	68, 891, 418	82, 709, 501	88, 877, 406	73, 626, 192	69, 375, 747
Per cent. from United States	54	48	41	8	3	15	21	42	50	43	25	53	64

*In the above table the imports of wheat into Great Britain from Canada are included in the imports from the United States, as such imports were comprised almost exclusively of wheat produced in the United States and exported via Montreal.

APPENDIX No. 22.

Statement showing the number of bushels of corn (including corn-meal) imported into the United Kingdom from 1862 *to* 1874, *inclusive.*

[Compiled from the Reports of Trade and Navigation of Great Britain.]

Countries whence imported.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
United States*	14, 984, 611	9, 233, 010	556, 766	3, 874, 623	14, 605, 889	9, 582, 343	8, 713, 906	2, 789, 048	82, 262	17, 344, 868	41, 157, 158	22, 363, 444	26, 383, 651
Germany	.....	.....	.....	.....	.....	.....	321, 198	475, 834	.....	.....	.....	.....	46, 782
Turkey	3, 181, 896	8, 052, 280	6, 874, 158	5, 897, 914	8, 900, 957	2, 706, 508	7, 986, 344	23, 921, 674	21, 667, 440	8, 540, 440	3, 279, 230	9, 999, 344	4, 188, 267
Russia	1, 745, 464	1, 842, 840	2, 615, 844	2, 205, 945	862, 269	461, 925	1, 329, 762	1, 209, 236	5, 023, 450	4, 172, 976	847, 702	2, 411, 027	908, 144
Wallachia and Moldavia	1, 001, 936	2, 736, 856	1, 174, 525	1, 004, 745	1, 128, 406	200, 323	2, 227, 046	3, 949, 652	4, 426, 948	2, 556, 102	1, 896, 826	2, 268, 686	637, 589
Austria	.....	753, 456	153, 135	65, 551	85, 611	.....	.....	.....	.....	312, 098	311, 312	239, 871	172, 798
Morocco	547, 352	128, 296	.....	76, 026	231, 009	268, 044	.....	.....	.....	246, 336	713, 214	1, 164, 604	861, 641
France	.....	80, 264	311, 974	134, 279	866, 434	1, 870, 893	356, 922	332, 624	743, 364	193, 246	.....	10, 184	161, 464
Egypt	439, 960	805, 456	.....	.....	.....	410, 647	1, 075, 452	21, 732	22, 428	151, 810	744, 002	69, 553	22, 766
Italy	.....	.....	.....	.....	.....	.....	572, 978	2, 474, 234	1, 388, 482	.....	.....	85, 420	105, 753
Portugal	.....	.....	.....	.....	.....	220, 924	182, 278	.....	.....	.....	.....	6, 394	60, 402
Azores	.....	.....	.....	.....	.....	79, 851	.....	.....	.....	.....	.....	1, 393	7, 648
All other countries	100, 693	147, 975	548, 666	345	78, 295	154, 769	193, 344	166, 270	170, 674	151, 564	195, 896	342, 262	325, 526
Total	22, 001, 912	23, 780, 433	12, 235, 068	13, 259, 418	26, 758, 870	15, 956, 227	22, 959, 230	35, 340, 304	33, 525, 048	33, 669, 440	49, 065, 340	38, 562, 181	33, 882, 231
Per cent. from the United States	68	39	5	29	54	60	38	8	2	52	83	58	78

* In the above table the imports of corn into Great Britain from Canada are included in the imports from the United States, as such imports were composed almost exclusively of corn produced in the United States and exported via Montreal.

APPENDIX No. 23.

The following table indicates the total tonnage entered at Montreal, Boston, New York, Philadelphia, Baltimore, New Orleans, and San Francisco from 1853 to 1876, inclusive:

Year.	Montreal.	Boston.	New York.	Philadelphia.	Baltimore.	New Orleans.	San Francisco.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1853	59, 712	582, 490	1, 755, 521	183, 944	119, 089	511, 878	252, 820
1854	72, 305	653, 443	1, 840, 007	181, 673	156, 448	492, 434	206, 952
1855	48, 139	707, 924	1, 735, 307	185, 975	165, 127	435, 863	172, 947
1856	69, 962	682, 165	1, 681, 659	173, 178	153, 323	663, 067	168, 352
1857	65, 712	714, 821	2, 035, 649	189, 102	163, 381	612, 286	149, 342
1858	70, 183	665, 442	1, 694, 219	156, 671	156, 810	583, 776	147, 175
1859	85, 319	734, 167	1, 890, 144	180, 421	189, 982	659, 083	221, 439
1860	118, 216	718, 567	1, 973, 812	185, 162	186, 417	632, 398	235, 001
1861	248, 351	771, 948	2, 320, 927	183, 408	225, 110	68, 993	205, 602
1862	259, 901	619, 435	2, 509, 749	171, 882	123, 688	.....	281, 698
1863	195, 809	639, 828	2, 554, 858	194, 443	128, 565	.....	256, 584
1864	142, 046	681, 180	2, 382, 192	188, 938	102, 752	50, 588	299, 558
1865	134, 758	655, 035	2, 075, 477	159, 579	88, 466	50, 970	321, 253
1866	189, 280	725, 424	2, 697, 325	222, 552	132, 836	228, 339	338, 130
1867	185, 354	731, 930	2, 754, 005	226, 735	203, 618	253, 729	310, 896
1868	186, 104	642, 578	2, 865, 252	278, 440	216, 727	326, 216	413, 673
1869	251, 557	779, 371	3, 101, 691	292, 595	225, 302	381, 882	443, 737
1870	306, 065	793, 927	3, 093, 186	300, 006	272, 290	458, 447	393, 983
1871	344, 323	836, 104	3, 413, 436	369, 619	315, 734	566, 797	353, 493
1872	391, 926	881, 486	3, 969, 339	417, 911	368, 136	501, 965	423, 572
1873	412, 478	819, 819	4, 211, 624	466, 817	397, 167	522, 791	548, 477
1874	423, 423	730, 769	5, 119, 618	657, 045	558, 599	630, 985	554, 191
1875	642, 386	768, 678	4, 421, 074	532, 295	561, 314	454, 006	434, 241
1876	.....	.....	.....	.....	.....	.....	.....

APPENDIX No. 24.

Statement exhibiting land-concessions by Congress to States and corporations for railroad purposes from 1850 to 1876.

States.	Date of grant.	Name of road.	Estimated quantity embraced in the limits of the grant.	Estimated quantity which the company will receive from the grant.	Number of acres certified or patented up to June 30, 1875.
			Acres.	*Acres.*	*Acres.*
Illinois	Sept. 20, 1850	Illinois Central	2, 595, 053	2, 595, 053	2, 595, 053
	Sept. 20, 1850	Mobile and Chicago			
Mississippi	Sept. 20, 1850	Mobile and Ohio River	1, 004, 640	737, 130	737, 130
	Aug. 11, 1856	Vicksburgh and Meridian	404, 800	200, 000	198, 027
	Aug. 11, 1856	Gulf and Ship Island	*625, 800	200, 000	.....
Alabama	Sept. 20, 1850	Mobile and Ohio River	230, 400	419, 528	419, 528
	May 17, 1856	Alabama and Florida	*419, 520	394, 522	394, 522
	June 3, 1856	Selma, Rome and Dalton	481, 920	440, 700	457, 407
	June 3, 1856	Coosa and Tennessee	*132, 480	67, 784	67, 784
	June 3, 1856	Mobile and Girard	*840, 880	504, 145	504, 145
	June 3, 1856	Alabama and Chattanooga	897, 920	461, 456	552, 199
	June 3, 1856	South and North Alabama	576, 000	420, 000	436, 720
Florida	May 17, 1856	Florida Railroad	442, 542	281, 984	881, 984
	May 17, 1856	Florida and Alabama	*165, 688	165, 688	165, 688

* No evidence of the construction of any part of these roads having been filed in the General Land-Office the grants are presumed to have lapsed, but the lands have not been restored and Congress has taken no action in the matter.

Land-concessions by Congress to States and corporations, &c.—Continued.

States.	Date of grant.	Name of road.	Estimated quantity embraced in the limits of the grant.	Estimated quantity which the company will receive from the grant.	Number of acres certified or patented up to June 30, 1875.
			Acres.	*Acres.*	*Acres.*
Florida	May 17, 1856	Pensacola and Georgia	*1, 568, 729	1, 275, 212	1, 275, 212
	May 17, 1856	Florida, Atlantic and Gulf Central	*183, 153	37, 583	37, 583
Louisiana	June 3, 1856	North Louisiana and Texas	610, 880	353, 211	353, 211
	June 3, 1856	New Orleans, Opelousas and Great Western	967, 840	307, 200	719, 193
Arkansas	Feb. 9, 1853	Cairo and Fulton	1, 160, 667	1, 115, 408	1, 115, 408
	July 28, 1866	do	1, 040, 000	300, 000	194, 524
	Feb. 9, 1853	Memphis and Little Rock	438, 646	127, 232	127, 232
	July 28, 1866	do	365, 539	10, 000	14, 606
	Feb. 9, 1853	Little Rock and Fort Smith	550, 525	550, 525	550, 520
	July 28, 1866	do	454, 771	450, 000	336, 196
	July 4, 1866	Iron Mountain	864, 000	200, 000	.....
Missouri	June 10, 1852	Hannibal and Saint Joseph	781, 944	599, 400	599, 031
	June 10, 1852	Pacific and Southwest Branch	1, 161, 235	1, 161, 235	1, 161, 204
	Feb. 9, 1853	Cairo and Fulton	219, 262	63, 540	4, 017
	July 28, 1866	do	182, 718	5, 000	.....
	July 4, 1866	Saint Louis and Iron Mountain	640, 000	120, 000	.....
Iowa	May 15, 1856	Burlington and Missouri River	948, 643	292, 085	292, 085
	June 2, 1864	do	.....	96, 600	97, 227
	May 15, 1856	Chicago, Rock Island and Pacific	1, 261, 181	482, 500	482, 254
	June 2, 1864	do	.....	160, 991	161, 372
	May 15, 1856	Cedar Rapids and Missouri River	1, 298, 739	800, 000	782, 250
	June 2, 1864	do	.....	356, 988	348, 296
	May 15, 1856	Iowa Falls and Sioux City	1, 226, 163	1, 226, 163	683, 023
	May 15, 1856	Dubuque and Sioux City	.....	.....	473, 606
	May 12, 1864	McGregor and Missouri River	1, 536, 000	400, 000	137, 572
	May 12, 1864	Sioux City and Saint Paul	524, 800	400, 000	396, 538
Michigan	June 3, 1856	Detroit and Milwaukee	355, 420	30, 998	30, 998
	June 3, 1856	Port Huron and Milwaukee	312, 384	6, 429	6, 428
	June 3, 1856	Jackson, Lansing and Saginaw	1, 052, 469	750, 000	742, 940
	June 3, 1856	Flint and Pere Marquette	586, 828	513, 000	512, 589
	June 3, 1856	Grand Rapids and Indiana	629, 182	629, 183	629, 182
	June 7, 1864	do	531, 800	213, 000	217, 434
	June 3, 1856	Marquette, Houghton and Ontonagon	.....	.....	432, 707
	Mar. 3, 1865	Bay de Noquet	128, 000	128, 000	128, 000
Michigan, (Res.)	July 5, 1862	Chicago and Northwestern	564, 480	520, 000	517, 908
Wisconsin	June 3, 1856	West Wisconsin	999, 983	800, 000	796, 912
	June 3, 1856	Wisconsin Railroad Farm Mortgage Land Company	.....	.....	39, 929
	June 3, 1856	Saint Croix and Lake Superior and branch to Bayfield*	524, 714 318, 737	843, 452	524, 718
	May 5, 1864	Saint Croix and Lake Superior and branch to Bayfield*	350, 000 215, 000	565, 000	318, 740
	June 3, 1856	Chicago and Northwestern	600, 000	600, 000	546, 392
	May 5, 1864	Wisconsin Central	1, 800, 000	750, 000	398, 865
Minnesota	Mar. 3, 1857	First division Saint Paul and Pacific	1, 248, 038	1, 248, 638	1, 237, 443
	Mar. 3, 1857	Branch Saint Paul and Pacific	1, 475, 000	940, 000	522, 925
	Mar. 3, 1871	Saint Vincent extension of Saint Paul and Pacific	2, 000, 000	2, 000, 000	780, 291
	Mar. 3, 1857	Minnesota Central	643, 403	378, 000	179, 058
	Mar. 3, 1857	Winona and Saint Peter	1, 410, 000	710, 000	1, 609, 748
	Mar. 3, 1857	Saint Paul and Sioux City	1, 010, 000	850, 000	929, 566
	May 5, 1864	Lake Superior and Mississippi	920, 000	800, 000	743, 241
	July 4, 1866	Southern Minnesota	735, 000	450, 000	265, 394
	July 4, 1866	Hastings and Dakota	550, 000	500, 000	169, 911
Kansas	Mar. 3, 1863	Leavenworth, Lawrence and Galveston	800, 000	480, 000	259, 330
	Mar. 3, 1863	Missouri, Kansas and Texas	1, 520, 000	950, 000	977, 954
	Mar. 3, 1863	Atchison, Topeka and Santa Fé	3, 000, 000	3, 000, 000	2, 274, 686
	July 25, 1866	Missouri River, Fort Scott and Gulf	.....	.....	22, 527
	July 23, 1866	Saint Joseph and Denver City	1, 700, 000	500, 000	441, 158
	July 25, 1866	Missouri River, Fort Scott and Gulf	2, 350, 000	17, 000	13, 849
Corporations	July 1, 1866	Union Pacific	12, 000, 000	12, 000, 000	1, 844, 297
	July 1, 1862	Central branch Union Pacific	245, 166	245, 166	186, 453
	July 1, 1862	Kansas Pacific	6, 000, 000	6, 000, 000	506, 555
	Mar. 3, 1869	Denver Pacific	1, 000, 400	1, 100, 000	49, 811
	July 1, 1862	Central Pacific	8, 000, 000	8, 000, 000	376, 977

*No evidence of the construction of any part of these roads having been filed in the General Land-Office, the grants are presumed to have lapsed, but the lands have not been restored, and Congress has taken no action in the matter.

Land-concessions by Congress to States and corporations, &c.—Continued.

States.	Date of grant.	Name of road.	Estimated quantity embraced in the limits of the grant.	Estimated quantity which the company will receive from the grant.	Number of acres certified or patented up to June 30, 1875.
			Acres.	*Acres.*	*Acres.*
Corporations...	July 1, 1862	Central Pacific	1, 000, 100	1, 100, 000	3s7, 6 0
	May 6, 1870	Burlington and Missouri River	2, 441, 600	2, 441, 600	2, 374, 090
	July 2, 1864	Sioux City and Pacific	60, 000	45, 000	40, 596
	July 2, 1864	Northern Pacific	47, 000, 000	47, 000, 000	630, 717
	July 13, 1866	Placerville and Sacramento Valley	†200, 000	100, 000	.....
	July 25, 1866	Oregon branch of the Central Pacific	3, 000, 000	3, 000, 000	494, 059
	July 25, 1866	Oregon and California	3, 500, 000	3, 500, 000	236, 525
	July 27, 1866	Atlantic and Pacific	42, 000, 000	40, 000, 000	504, 478
	July 27, 1866	Southern Pacific	6, 000, 000	3, 750, 000	686, 118
	Mar. 3, 1871	Southern Pacific	3, 520, 000	3, 000, 000	41, 178
	Mar. 2, 1867	Stockton and Copperopolis	†320, 000	100, 000	.....
	May 4, 1870	Oregon Central	1, 200, 000	300, 000	.....
	Mar. 3, 1871	Texas Pacific	18, 000, 000	17, 000, 000	.....
	Mar. 3, 1871	New Orleans, Baton Rouge and Vicksburgh	3, 800, 000	1, 600, 000	.....

† Lands declared forfeited by Congress.

APPENDIX No. 25.

Recapitulation of statement exhibiting land-concessions by acts of Congress to States and corporations for railroad purposes to the close of the fiscal year ending June 30, 1876.

States.	Estimated quantity embraced in the limits of the grant.	Estimated quantity which companies receive from the grant.	Number of acres certified or patented under the grant.
	Acres.	*Acres.*	*Acres.*
Illinois	2, 595, 053	2, 595, 053	2, 595, 053
Mississippi	2, 062, 240	1, 137, 130	935, 158
Alabama	3, 579, 120	2, 708, 135	2, 832, 309
Florida	2, 360, 114	1, 760, 467	1, 760, 468
Louisiana	1, 578, 720	660, 411	1, 072, 405
Arkansas	4, 872, 149	2, 753, 171	2, 368, 494
Missouri	2, 985, 160	1, 949, 175	1, 824, 253
Iowa	6, 795, 527	4, 215, 327	3, 855, 129
Michigan	4, 712, 480	3, 343, 125	3, 218, 129
Wisconsin	4, 802, 436	3, 558, 452	2, 625, 489
Minnesota	9, 992, 041	7, 876, 638	6, 437, 592
Kansas	9, 370, 000	4, 947, 000	4, 176, 156
	55, 717, 041	37, 504, 087	33, 700, 629
Corporations, (Pacific Railroads)	159, 486, 766	150, 281, 766	8, 359, 491
	215, 203, 807	187, 785, 853	42, 060, 120
Deduct for lands reverted and lapsed and for lands declared forfeited by Congress	6, 859, 544	4, 569, 120	4, 007, 590
Total	208, 344, 263	183, 216, 733	38, 052, 530

APPENDIX No. 26.

Number of acres of land granted by Congress for railroads each year.

Year.	No. of acres.	Year.	No. of acres.
1850	3,751,711	1865	192,000
1852	2,280,635	1866	64,902,000
1853	1,856,711	1867	100,000
1856	12,083,295	1869	1,100,000
1857	4,126,638	1870	2,741,680
1862	15,345,166	1871	24,152,515
1863	4,430,000		
1864	50,787,579	Total	187,785,650

N. B.—No land has been granted to any railroad, or to any State for the benefit of any railroad, since April 20, 1871.

APPENDIX No. 27.

Statement exhibiting land-grants by Congress for canal purposes from 1827 *to June* 30, 1876.

States.	Canals.	Acres granted.
Indiana	Wabash and Erie Canal	1,439,279
Ohio	do	266,535
Do	Miami and Dayton	333,886
Do	General canal purposes	500,000
Illinois	Canal Illinois River to Lake Michigan	290,915
Wisconsin	Milwaukee and Rock River	125,431
Do	Breakwater, harbor, and ship canal	200,000
Michigan	Saint Mary's Ship Canal	750,000
Do	Portage Lake and Lake Superior Ship Canal	400,000
Do	Superior to Lac La Belle	100,000

RECAPITULATION.

Indiana	1,439,279
Ohio	1,100,361
Illinois	290,915
Wisconsin	325,431
Michigan	1,250,000
Total	4,405,986

APPENDIX No. 28.

Public lands granted for canal purposes to June 30, 1876.

Year.	No. of acres.	Year.	No. of acres.
1827	1,996,729	1865	200,000
1828	833,826	1866	500,000
1838	125,431		
1852	750,000	Total	4,405,986

APPENDIX No. 29.

Statement showing the amount of bonds issued to the Pacific railway companies, with the interest paid and due thereon, at the close of the business of the Treasury Department December 30, 1876.

Name of railway.	Authorizing acts.	Rate of interest.	When payable.	Interest payable.	Principal outstanding.	Interest accrued and not yet paid.	Interest paid by the United States.	Interest repaid by transportation of mails, &c.	Balance of interest paid by the United States.
Central Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	$25,885,120 00	$776,553 60	$12,580,804 87	$1,268,672 12	$11,312,132 75
Kansas Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	6,303,000 00	189,090 00	3,482,073 09	1,515,718 49	1,966,354 60
Union Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	27,236,512 00	817,095 36	13,518,515 37	4,126,871 52	9,391,643 85
Central Branch, Union Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	1,600,000 00	48,000 00	877,808 26	44,408 05	833,400 21
Western Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	1,970,560 00	59,116 80	840,613 74	9,367 00	831,246 74
Sioux City and Pacific	July 1, 1862, and July 2, 1864	6 per cent	30 years from date	January and July	1,628,320 00	48,849 60	780,403 09	39,470 28	740,932 81
Totals					64,623,512 00	1,938,705 36	32,080,218 42	7,004,507 46	25,075,710 96

Principal outstanding	$64,623,512 00
Interest paid	25,075,710 96
Interest due	1,938,705 36
Total	91,637,928 32

APPENDIX No. 30.

RAILROADS OF THE WORLD.

Statement showing the mileage of railroads in each country and state at the close of the year 1875.

Countries and states.	Miles of railroad in operation.	Countries and states.	Miles of railroad in operation.
NORTH AMERICA.		EUROPE—Continued.	
United States of America	74,658	Luxemburg	169
Dominion of Canada	4,488	Denmark	799
United States of Mexico	327	Sweden	2,47[illegible]
		Norway	325
Total North America	79,473	Russia	12,074
		Roumania	766
CENTRAL AMERICA AND WEST INDIES.		Turkey	963
		Greece	7
Honduras	66		
Costa Rica	29	Total in Europe	88,007
Panama	49		
Cuba	427	ASIA.	
Jamaica	34		
Barbadoes	6	Turkey, (Asia Minor)	253
		India, (British)	6,502
Total Central America, &c	611	Ceylon	112
		Java	179
SOUTH AMERICA.		Japan	41
Colombia	43	Total Asia	7,087
Venezuela	39		
Guiana, (British)	68	AFRICA.	
Brazil	837		
Paraguay	47	Egypt	1,013
Uruguay	197	Tunis	37
Argentine Republic	994	Algeria	333
Peru	972	Cape Colony	89
Chili	629	Mauritius	66
Total South America	3,826	Total Africa	1,538
EUROPE.		AUSTRALASIA.	
Great Britain and Ireland	16,699	Victoria	674
France	12,376	New South Wales	450
Spain	3,818	Queensland	362
Portugal	643	South Australia	274
Italy	4,787	Western Australia	50
Switzerland	1,098	Tasmania	45
Austria	6,366	New Zealand	257
Hungary	3,966	Tahiti	21
Germany	17,372		
Belgium	2,249	Total Australasia	2,148
Holland	1,062		

RECAPITULATION BY GEOGRAPHICAL DIVISIONS.

North America	79,473
Central America and West Indies	611
South America	3,826
Total America	83,910
Europe	88,007
Asia	7,087
Africa	1,538
Australasia	2,148
Grand total	182,690

APPENDIX No. 31.

Progress of railway construction in the United States, stated from 1830 to 1875, inclusive.

[From Manual of the Railroads of the United States, by H. V. Poor.]

Year.	Miles in operation.	Annual increase of mileage.	Year.	Miles in operation.	Annual increase of mileage.	Year.	Miles in operation.	Annual increase of mileage.
1830	23	.....	1846	4,930	297	1862	32,120	834
1831	95	72	1847	5,598	668	1863	33,170	1,050
1832	229	134	1848	5,996	398	1864	33,908	738
1833	380	151	1849	7,365	1,369	1865	35,085	1,117
1834	633	253	1850	9,021	1,656	1866	36,827	1,742
1835	1,098	465	1851	10,982	1,961	1867	39,276	2,449
1836	1,273	175	1852	12,908	1,926	1868	42,255	2,979
1837	1,497	224	1853	15,360	2,452	1869	47,208	4,953
1838	1,913	416	1854	16,720	1,360	1870	52,898	5,690
1839	2,302	389	1855	18,374	1,654	1871	60,568	7,670
1840	2,818	516	1856	22,016	3,642	1872	66,735	6,167
1841	3,535	717	1857	24,503	2,487	1873	70,840	4,105
1842	4,026	491	1858	26,968	2,465	1874	72,741	1,901
1843	4,185	159	1859	28,789	1,821	1875	74,658	1,917
1844	4,377	192	1860	30,635	1,846			
1845	4,633	256	1861	31,286	651			

APPENDIX No. 32.

Statement showing the length of main line and of other lines controlled by some of the principal railroad companies of the United States in 1876.

Road.	Main line.	Other lines controlled.	Total.
Boston and Albany	201	115	316
Central Vermont	117	477	594
New York Central and Hudson River Railroad	441	559	1,000
Erie Railway	459	500	959
Pennsylvania	358	5,575	5,933
Baltimore and Ohio	379	1,088	1,467
Grand Trunk	876	512	1,388
Illinois Central	705	402	1,270
Chicago and Northwest	1,186	804	1,990
Chicago and Saint Paul	1,399	262	1,661
Chicago, Burlington and Quincy	505	796	1,301
Chicago, Rock Island and Pacific	500	480	980
Louisville and Nashville	185	549	734

APPENDIX No. 33

Statement showing the number of square miles of territory to each mile of road and to each mile of track in each geographical group of States in 1875.

States.	Miles of track.	Miles of road.	Square miles of territory to each mile of track.	Square miles of territory to each mile of road.
New England States	7,573	5,638	9.02	12.12
Middle States	22,117	14,538	5.70	8.68
Western States	40,943	33,512	14.67	24.68
Southern States	16,121	16,121	49.67	49.67
Pacific States	2,304	2,304	168.57	168.57

APPENDIX No. 34.

Statement showing the total exports of cotton and the quantity exported to each country from 1856 to 1876.

Countries.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Austria	6,034,452	7,614,592	6,980,136	16,556,517	7,471,499	.....	.....	.....	.....	.....	.....
Belgium	23,171,784	12,247,423	9,345,329	14,328,476	14,800,474	5,681,911	.....	.....	.....	.....	326,652
Denmark	1,168,081	1,176,366	.....	.....	.....	.....	.....	.....	.....	.....	229,818
France	221,767,611	174,234,678	178,789,761	186,490,252	283,967,334	57,270,417	23,018	1,266,720	1,778,352	357,325	108,235,040
Germany, Prussia, Hamburg, Holland, and Bremen	75,205,915	55,366,987	37,933,614	81,836,882	78,830,129	14,549,569	8,437	12,885	23,586	141,357	16,279,723
England	862,611,813	656,094,427	765,353,951	909,572,145	1,215,104,929	202,204,598	3,545,363	9,840,522	9,650,850	6,004,374	507,839,870
Scotland	18,751,881	7,349,749	8,597,752	8,194,968	18,018,395	2,539,553				.....	3,246,850
Ireland	17,964,294	20,553,796	7,000,686	25,919,089	31,013,458	2,598,114				.....	1,277,104
Gibraltar	251,233	.....	106,420	164,482	3,192,256	64,919	.....	.....	.....	.....	.....
British West Indies and British Honduras	.....	.....	.....	484,637	6,800	130,760	.....	2,470	.....	.....	172,550
British possessions in North America	4,158,530	857,490	130,617	57,011	1,385,369	151,524	57,515	151,724	55,081	91,990	821,377
Italy and The Two Sicilies	33,473,569	17,239,859	19,497,950	21,488,538	27,018,700	4,686,651	844,220	.....	58,523	.....	198,574
Mexico	6,010,395	7,958,638	9,084,609	5,993,635	9,043,377	1,410,659	.....	.....	417,497	.....	50,317
Portugal and Portuguese possessions	388,393	56,439	.....	144,254	151,061	208,942	.....	.....	.....	.....	.....
Azores, Madeira, and Cape de Verde Islands	.....	1,335	3,056	4,003	575	26,779	.....	.....	.....	.....	.....
Russia	4,643,384	31,933,534	32,110,204	43,619,863	21,698,054	4,251,273	.....	.....	.....	.....	2,685,884
Spain	58,479,179	45,557,067	39,630,463	60,522,742	44,021,833	11,155,059	582,747	.....	.....	.....	8,815,730
Cuba and Dutch West Indies	4,950	2,000	1,871	8,921	11,429	2,550	.....	.....	.....	.....	69,960
Sweden and Norway	17,289,637	10,038,095	4,057,593	11,032,609	11,662,859	582,831	.....	.....	.....	.....	323,380
Turkey in Europe	15,000	.....	.....	1,600	.....	.....	.....	.....	.....	.....	.....
South American ports	41,600	.....	.....	25,100	35,359	.....	.....	.....	.....	.....	.....
All other ports not elsewhere specified	.....	.....	.....	24,840	252,448	.....	3,264	110,662	10,022	12,120	.....
Total	1,351,431,701	1,048,282,475	1,118,624,013	1,386,468,562	1,767,686,338	307,516,099	5,064,561	11,384,986	11,993,911	6,607,166	650,572,829

Countries.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Austria	.....	165,405	.....	.....	2,164,845	.....	1,378,853	.....	.....	.....
Belgium	887,321	803,958	186,774	1,726,152	17,934,342	10,098,368	12,126,640	8,553,267	3,113,752	15,538,299
Denmark	.....	265,048	106,250	.....	.....	.....	.....	.....	.....	.....
France	83,929,117	93,233,081	100,557,869	153,146,501	59,611,304	88,187,183	113,370,030	177,365,583	155,139,454	203,975,759
Germany, Prussia, Holland, Hamburg, and Bremen	28,455,274	78,844,352	73,042,560	95,300,864	159,089,040	65,407,589	114,428,399	133,617,962	79,355,655	142,811,487
England	518,852,838	560,008,854	431,789,258	643,360,908	1,053,595,339	675,951,688	814,071,709	875,337,752	878,442,263	920,917,121
Scotland	5,467,510	3,663,062	537,061	493,276	4,709,487	435,569	2,958,165	3,424,943	618,045	.....
Ireland	.....	842,900	4,216,617	5,311,594	44,017,517	28,927,598	41,619,365	24,809,077	32,881,451	36,412,618
Gibraltar	106,477	71,450	161,987	810,004	49,931	.....	.....	.....	.....	11,484

British West Indies and British Honduras		13, 427			9, 931			424, 779		
British possessions in North America	644, 030	1, 045, 593	1, 122, 183	1, 561, 008	2, 393, 083	1, 896, 077	1, 494, 142	4, 011, 077	3, 561, 511	4, 980, 616
Italy and The Two Sicilies	3, 611, 456	6, 032, 974	4, 478, 063	7, 274, 510	21, 457, 495	5, 922, 224	15, 283, 998	12, 298, 366	9, 041, 936	23, 379, 304
Mexico	3, 310, 842	8, 228, 598	2, 042, 224	6, 609, 707	11, 309, 498	957, 209	550, 639	2, 289, 561	1, 305, 276	6, 972, 575
Portugal and Portuguese possessions				603	173, 068	442			4, 990	
Azores, Madeira, and Cape de Verde Islands	472	927					416	425	1, 000	1, 057
Russia	5, 089, 784	5, 874, 019	9, 762, 653	15, 170, 334	31, 135, 476	24, 683, 546	49, 573, 330	54, 090, 632	65, 708, 178	80, 896, 983
Spain	11, 034, 094	25, 620, 230	16, 158, 397	27, 704, 711	47, 155, 961	32, 570, 783	27, 722, 241	53, 359, 064	29, 813, 227	47, 561, 153
Cuba and Dutch West Indies	54, 569	49, 659	425	88, 351		768				449, 607
Sweden and Norway					6, 886, 874		5, 457, 506	9, 019, 815	1, 432, 165	7, 497, 271
Turkey in Europe										
South American ports	29, 804				4, 250	4, 459				
All other ports not elsewhere specified			115, 000		631, 583		28, 000			
Total	661, 473, 588	784, 763, 633	644, 327, 921	958, 558, 523	1, 462, 928, 024	933, 537, 413	1, 200, 063, 530	1, 358, 602, 303	1, 260, 418, 903	1, 491, 405, 334

APPENDIX No. 35.

Importation of cotton into the United Kingdom of Great Britain and Ireland, 1853 to 1874, inclusive.

From—	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.
	Cwts.	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
The United States	5, 879, 034	6, 447, 780	6, 085, 977	6, 964, 643	5, 848, 054	7, 439, 623	8, 586, 672	9, 963, 309	7, 316, 969	120, 762	57, 090
Bombay	1, 623, 644	1, 069, 964	1, 296, 243	1, 611, 577	2, 235, 162	1, 185, 023	1, 717, 240	1, 822, 689	3, 295, 004	3, 505, 484	3, 878, 757
Egypt	250, 607	208, 510	291, 274	307, 134	219, 038	341, 360	336, 313	392, 447	365, 108	526, 897	835, 289
Brazil	215, 988	175, 925	219, 446	194, 917	267, 061	166, 231	200, 705	154, 347	154, 378	208, 384	201, 814
Madras	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bengal, Burmah, Pegu	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Turkey	.....	.....	.....	.....	.....	.....	3, 551	.....	.....	38, 797	108, 876
France	.....	.....	38, 966	11, 547	18, 810	47, 005	29, 903	19, 254	8, 531	49, 029	15, 033
Germany	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British North America	.....	.....	.....	.....	.....	.....	.....	.....	13, 616	.....	.....
Peru	.....	.....	.....	8, 765	4, 709	2, 484	2, 305	2, 571	3, 585	.....	.....
New Grenada	.....	.....	.....	.....	.....	.....	.....	.....	.....	10, 342	22, 683
Bermudas	.....	.....	.....	.....	.....	.....	.....	.....	.....	5, 024	63, 807
Ceylon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Venezuela	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bahamas	.....	.....	.....	.....	.....	.....	.....	.....	.....	43, 220	202, 009
Other British West India Islands	.....	.....	.....	.....	11, 887	1, 251	1, 452	7, 336	1, 772	3, 782	20, 460
Cuba	.....	.....	.....	.....	.....	.....	.....	.....	.....	27, 184	31, 920
Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chili	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mauritius	.....	.....	.....	.....	15, 301	14, 988	11, 894	28, 250	7 288	17, 948	.....
Japan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6, 352
China	.....	.....	.....	.....	.....	.....	.....	.....	.....	15, 768	275, 503
Hayti and San Domingo	.....	.....	.....	.....	.....	.....	.....	.....	4, 886	3, 482	5, 931
All other countries	24, 287	20, 438	30, 123	43, 259	36, 611	37, 233	56, 296	28, 623	51, 906	101, 890	252, 898
Total	7, 993, 560	7, 922, 617	7, 962, 071	9, 141, 842	8, 654, 633	9, 235, 198	10, 946, 331	12, 419, 096	11, 223, 078	4, 678, 333	5, 978, 422

Importation of cotton into the United Kingdom of Great Britain and Ireland, 1853 to 1874, inclusive—Continued.

From—	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
	Cwts.	*Cwts.*	*Cwts*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
The United States	126, 322	1, 212, 790	4, 643, 370	4, 715, 633	5, 128, 971	4, 683, 502	6, 395, 045	9, 273, 910	5, 585, 715	7, 433, 693	7, 811, 847
Bombay	3, 573, 048	3, 152, 484	3, 786, 915	3, 326, 538	3, 296, 068	2, 994, 901	2, 511, 075	2, 851, 846	2, 530, 735	2, 473, 355	3, 045, 248
Egypt	1, 120, 479	1, 578, 912	1, 055, 900	1, 127, 541	1, 153, 419	1, 432, 568	1, 283, 037	1, 572, 915	1, 585, 551	1, 830, 153	1, 538, 549
Brazil	339, 442	494, 671	611, 808	628, 761	882, 114	709, 089	573, 331	769, 275	1, 004, 552	647, 150	709, 834
Madras	421, 833	438, 645	757, 148	438, 341	645, 492	840, 128	265, 471	481, 264	671, 774	398, 327	582, 411
Bengal, Burmah, Pegu	409, 420	367, 595	913, 244	678, 269	456, 559	448, 744	264, 004	510, 381	732, 037	407, 304	41, 269
Turkey	151, 290	216, 362	98, 933	47, 812	36, 175	103, 977	85, 919	23, 127	53, 482	52, 125	10, 871
France	47, 589	21, 474	68, 532	19, 422	11, 516	31, 724	330, 653	11, 382	50, 492	52, 530	12, 010
Germany	.....	.....	.....	.....	.....	.....	.....	53, 418	6, 612	30, 326	5, 531
British North America	11, 125	553	9, 175	11, 254	1, 677	1, 551	4, 317	.....	3, 168	.....	4, 949
Peru	.....	.....	.....	32, 499	42, 325	6, 667	21, 216	65, 221	98, 433	99, 492	72, 197
New Grenada	46, 065	109, 182	83, 641	73, 342	40, 863	70, 838	34, 295	50, 804	57, 634	.....	55, 151
Bermudas	148, 233	29, 271	3, 357	.....	.....	.....	.....	.....	.....	.....	.....
Ceylon	32, 499	21, 315	32, 306	5, 899	9, 934	14, 007	8, 269	.....	.....	.....	9, 867
Venezuela	11, 974	22, 066	19, 924	13, 389	2, 067	1, 352	8, 268	.....	.....	5, 251	.....
Bahamas	227, 814	129, 336	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other British West India Islands	8, 586	15, 177	29, 891	39, 301	21, 485	12, 594	18, 851	23, 492	11, 450	8, 264	3, 688
Cuba	43, 035	136, 896	2, 515	.....	.....	.....	.....	.....	.....	.....	.....
Australia	.....	.....	.....	.....	21, 063	26, 375	19, 477	32, 211	29, 083	30, 877	25, 284
Chili	.....	.....	.....	.....	14, 781	24, 323	36, 119	31, 260	23, 779	18, 660	7, 048
Mauritius	.....	.....	22, 220	20, 341	.....	.....	.....	.....	.....	.....	.....
Japan	83, 967	26, 633	.....	.....	.....	.....	.....	.....	.....	.....	.....
China	769, 259	320, 141	52, 120	4, 707	.....	.....	.....	.....	.....	.....	.....
Hayti and San Domingo	13, 476	14, 966	13, 338	22, 194	6, 969	10, 316	8, 041	12, 447	18, 247	30, 223	4, 783
All other countries	310, 499	423, 480	91, 466	67, 408	86, 415	86, 872	81, 769	113, 295	116, 162	126, 522	49, 294
Total	7, 975, 935	8, 731, 949	12, 295, 803	11, 272, 651	11, 857, 893	10, 900, 088	11, 949, 157	15, 876, 248	12, 578, 906	13, 639, 252	13, 940, 567

APPENDIX No. 36.

Statement showing the quantity of cotton consumed in Great Britain and the quantity imported from the United States, 1830 to 1876 inclusive.

Year.	Total quantity consumed.	Imported from the United States.	Per cent. from the United States.
	Bales.	*Bales.*	
1830	832,000	618,000	74.4
1840	1,250,000	1,238,000	99.1
1850	1,514,000	1,184,000	78.2
1851	1,663,000	1,394,000	83.8
1852	1,861,000	1,789,000	96.1
1853	1,904,000	1,532,000	78.0
1854	1,967,000	1,666,000	84.7
1855	2,101,000	1,623,000	77.2
1856	2,183,000	1,758,000	80.5
1857	2,031,000	1,482,000	73.0
1858	2,175,000	1,863,000	85.6
1859	2,297,000	2,086,000	90.1
1860	2,524,000	2,581,000	102.3
1861	2,364,000	1,841,000	77.9
1862	1,185,000	*72,000	6.1
1863	1,378,000	*132,000	9.9
1864	1,566,000	*198,000	12.6
1865	2,035,000	*462,000	22.7
1866	2,386,000	1,163,000	48.9
1867	2,573,000	1,226,000	47.6
1868	2,802,000	1,269,000	45.3
1869	2,628,000	1,040,000	39.5
1870	2,797,000	1,664,000	59.4
1871	3,115,000	2,249,000	72.5
1872	3,266,000	1,404,000	43
1873	3,180,000	1,898,000	59.6
1874	3,269,864	1,856,000	56.7
1875	3,155,620	1,836,000	51.6
1876	2,925,156	2,004,000	68.5

* No records kept during the war.

APPENDIX No. 37.

Value per pound of upland cotton exported from the United States during the years 1856 to 1876, inclusive.

Year.	Quantity.	Value.	Average value per pound.
	Pounds.	*Dollars.*	*Cents.*
1856	1,338,634,476	128,382,351	9.59
1857	1,035,341,750	131,575,859	12.70
1858	1,106,527,954	131,386,661	11.87
1859	1,372,755,006	161,434,928	11.77
1860	1,752,087,640	191,806,555	10.94
1861	301,345,778	34,051,483	10.63
1862	4,998,121	1,180,113	23.61
1863	10,857,239	6,652,405	61.27
1864	11,860,390	9,768,071	82.35
1865	6,276,582	5,424,370	86.42
1866	643,288,356	274,960,453	42.74
1867	654,731,274	197,115,582	30.10
1868	779,765,318	149,797,399	19.21
1869	641,542,677	160,258,160	24.98
1870	953,148,743	224,121,191	23.51
1871	1,459,7 5,036	216,889,570	14.78
1872	930,828,307	179,274,292	19.25
1873	1,194,369,621	224,892,382	19.92
1874	1,352,175,779	209,109,456	15.46
1875	1,255,979,783	189,099,856	15.06
1876	1,488,760,543	191,717,459	12.21

APPENDIX No. 38.

Statement showing the movement of cotton from the cotton States during the commercial years ending August 31, from 1855 to 1876, exclusive of the period of the war, for which no record could be obtained.

[Prepared by G. H. HESTER, esq., secretary of New Orleans Cotton Exchange.]

Years.	Net receipts at—																Overland to eastern delivery ports and mills.	Per cent.	Manufactured in the South.	Per cent.	Total crops.
	New Orleans.	Per cent.	Mobile.	Per cent.	Texas ports.	Per cent.	Florida ports.	Per cent.	Georgia ports.	Per cent.	North Carolina ports.	Per cent.	Virginia.	Per cent.	South Carolina ports.	Per cent.					
	Bales.		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*		*Bales.*
1855	1,232,644	43.30	454,595	15.98	80,737	2.85	136,597	4.81	378,674	13.30	26,139	.93	31,000	1.16	499,272	17.64	7,661	.03	.....	.....	2,847,399
1856	1,661,433	47.10	659,738	18.70	116,078	3.30	144,404	4.10	389,445	11.05	26,098	.72	20,458	.58	495,976	14.05	14,215	.40	.....	.....	3,527,845
1857	1,435,000	48.14	503,177	17.98	89,882	3.05	136,344	4.60	322,111	10.96	27,147	.92	23,773	.81	397,331	13.52	4,754	.02	.....	.....	2,939,519
1858	1,576,409	50.62	522,364	16.77	145,286	4.66	122,351	3.93	282,973	9.09	23,999	.77	24,705	.80	406,251	13.05	6,624	.31	.....	.....	3,113,962
1859	1,669,274	43.40	704,406	18.30	192,062	5.00	173,484	4.60	475,788	12.40	37,482	1.00	33,011	.80	480,653	12.50	85,321	2.00	.....	.....	3,851,481
1860	2,139,425	45.82	843,012	18.05	252,424	5.42	192,724	4.22	525,219	10.93	41,194	.88	56,987	1.22	510,109	11 03	108,676	2.43	.....	.....	*4,669,770
1861	1,751,599	47.94	546,794	14.95	144,747	4.96	121,172	3.33	477,584	12.72	56,295	1.57	78,132	2.14	336,339	9.30	143,424	3.09	.....	.....	3,656,086
1862	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†1,000,000
1863	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†1,000,000
1864	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†800,000
1865	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	†500,000
1866	711,629	33.03	429,102	19.82	174,985	8.12	149,139	7.00	263,373	12.22	64,559	3.00	37,531	1.70	112,273	5.21	211,885	10.00	.....	.....	2,154,476
1867	702,131	35.96	239,516	12.26	185,919	9.52	58,349	2.98	255,965	13.12	38,522	1.98	123,627	6.95	162,247	8.32	185,712	9.52	.....	.....	1,951,988
1868	579,231	23.84	366,193	15.08	114,666	4.72	34,689	1.43	495,005	20.36	38,587	1.59	187,487	7.71	240,225	9.88	374,860	15.39	.....	.....	2,430,893
1869	794,205	34.10	230,726	10.20	147,817	6.53	13,392	.59	357,253	15.80	35,912	1.59	160,418	7.05	198,943	9.90	321,891	14.24	.....	.....	2,260,557
1870	1,142,097	36.67	305,956	9.82	246,284	7.90	23,194	.74	485,374	15.58	58,884	1.89	203,981	6.60	246,593	7.91	322,386	10 35	79,843	2.54	3,114,592
1871‡	1,446,490	35.50	404,673	9.52	314,484	7.01	16,688	.38	725,528	13.09	77,223	1.78	339,175	8.00	350,692	8.07	580,813	14.56	91,240	2.09	4,347,006
1872	957,538	32.29	288,012	9.97	197,956	6.62	19,359	.65	450,539	15.15	52,528	1.41	276,098	9.30	271,241	9.12	341,080	12.46	120,000	4.03	2,974,351
1873	1,240,384	31.33	382,457	9.73	343,450	8.73	14,068	.35	614,039	14.62	61,576	1.56	433,583	11.03	374,476	9.52	378,813	9.63	137,662	3.50	3,930,508
1874	1,221,698	29.02	299,578	7.11	389,045	9.02	14,185	.34	625,857	15.01	57,895	1.32	505,876	12 14	438,194	10.27	489,534	11.73	128,526	4.04	4,170,388
1875	993,482	25.95	320,822	8.58	368,245	9.56	37,467	.97	576,684	14.55	101,161	2.74	419,664	10.96	439,550	11.58	444,220	11.71	§126,550	3.40	3,837,845
1876	1,424,003	30.74	374,672	.....	483,453	.....	39,100	.....	498,622	.....	105,097	.....	498,221	.....	416,255	.....	695,622	.....	133,637	.....	4,632,313

* Largest American crop on record. † Estimated. ‡ Figures up to this year inclusive from New York Shipping List. § Exclusive of 3,063 taken from ports.

APPENDIX No. 39.

STATEMENT SHOWING THE EXPORTS OF WHEAT, WHEAT-FLOUR, AND CORN FROM MONTREAL AND FROM NEW YORK—1860 TO 1876, INCLUSIVE.

Year ending June 30—	WHEAT.		WHEAT-FLOUR.		CORN.		TOTAL.		
	Exported from New York.	Exported from Montreal.	From New York.	From Montreal.	From New York.	From Montreal.	Wheat, wheat-flour, and corn exported from New York and from Montreal. New York.	Montreal.	Total.
	Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
1860	1, 880, 908	1, 645, 209	5, 342, 400	1, 249, 051	1, 580, 019	24, 387	8, 803, 327	2, 918, 647	11, 721, 974
1861	21, 320, 775	5, 584, 727	11, 994, 736	2, 726, 739	6, 874, 372	1, 447, 114	40, 189, 883	9, 758, 580	49, 948, 463
1862	28, 164, 879	6, 500, 796	14, 663, 101	2, 688, 646	14, 115, 962	1, 774, 546	56, 943, 942	10, 963, 988	67, 907, 930
1863	25, 956, 155	3, 741, 146	12, 721, 405	2, 772, 094	10, 889 962	638, 281	49, 567, 522	7, 151, 521	56, 719, 043
1864	17, 294, 391	2, 406, 531	10, 081, 179	3, 861, 319	2, 642, 588	21, 974	30, 018. 158	6, 289, 824	36, 307, 982
1865	5, 51-, 937	787, 938	7, 292, 803	2, 866, 504	1, 052, 407	734, 849	13, 864, 147	4, 389, 291	18, 253, 438
1866	.....	83, 278	.....	2, 588, 391	.....	1, 870, 223	.....	4, 541, 892	4, 541, 892
1867	424, 425	1, 576, 528	2, 799, 994	2, 560, 594	11, 015, 828	681, 708	14, 240, 247	4, 818, 830	19, 059, 077
1868	7, 208, 373	1, 081, 958	5, 001, 516	3, 070, 254	7, 369, 647	782, 4 7	19, 579, 536	4, 940, 709	24, 520, 245
1869	8, 379, 924	5, 595, 332	5, 150, 142	4, 347, 301	3, 694, 386	108, 018	17, 224, 452	10, 050, 651	27, 275, 103
1870	20, 077, 434	5, 973, 048	8, 532, 018	4, 389, 808	401, 939	6, 043	29, 011, 391	10, 368, 899	39, 380, 290
1871	18, 090, 794	7, 680, 834	9, 188, 514	4, 089, 798	4, 662, 238	2, 870, 998	31, 941, 546	14, 641, 630	46, 583, 176
1872	17, 889, 037	3, 818, 450	5, 121, 157	3, 748, 189	18, 331, 147	7, 546, 390	41, 341, 341	15, 113, 029	56, 454, 370
1873	15, 095, 260	8, 225, 649	6, 075, 994	3, 886, 060	20, 211, 512	3, 520, 918	41, 392, 766	15, 632, 627	57, 025, 393
1874	41, 482, 167	7, 556, 566	9, 441, 162	3, 736, 162	19, 504, 139	2, 561, 375	70, 427, 468	13, 854, 093	84, 281, 561
1875	24, 722, 963	7, 117, 159	9, 833, 700	3, 783, 195	15, 738, 526	1, 724, 220	50, 295, 189	12, 624, 574	61, 936, 393
1876	31, 431, 183	.....	10, 345, 870	.....	14, 741, 061	.....	56, 518, 114	.....	.....

APPENDIX No. 40.

Statement of flour, meal, and grain received at tide-water, by canal, from 1861 *to* 1876, *inclusive.*

[From the Annual Report of the auditor of the State of New York, on Tolls, Trade, and Tonnage.]

Years.	Barrels wheat-flour.	Barrels corn-meal.	Bushels wheat.	Bushels corn.	Bushels oats.	Bushels barley.	Bushels rye.	Bushels peas and beans.	Bushels malt.	Aggregate in tons.
1861	1,530,775	3,342	29,632,400	22,344,179	5,991,438	2,046,667	805,536	378,366	.....	1,859,182
1862	1,826,509	10,935	32,667,866	23,709,822	5,929,249	2,562,659	700,215	243,999	186,844	2,026,208
1863	1,628,982	30,009	22,350,533	19,974,643	12,567,500	3,263,792	442,858	395,299	441,879	1,719,968
1864	1,197,971	13,444	15,916,733	9,412,714	13,730,124	3,166,209	647,214	380,300	1,840,764	1,228,394
1865	989,764	16,074	10,458,333	18,060,607	11,006,375	4,523,583	1,113,643	267,999	653,472	1,271,076
1866	570,704	10,158	7,584,166	26,516,535	11,220,624	7,449,833	1,749,535	523,299	329,639	1,460,724
1867	450,050	4,120	9,466,100	15,405,750	8,841,000	3,866,041	890,286	762,133	816,857	1,060,724
1868	448,361	4,398	11,414,366	16,343,107	11,243,376	3,386,791	804,000	341,366	479,252	1,151,371
1869	552,611	3,148	18,718,933	7,048,964	5,377,553	3,577,666	376,107	119,100	319,886	1,010,628
1870	453,370	5,268	17,557,333	4,904,358	6,327,500	4,618,208	638,071	330,066	848,914	964,976
1871	288,250	4,898	21,577,299	20,127,965	6,833,625	3,677,208	1,068,643	109,533	753,943	1,486,555
1872	145,431	202	11,373,666	29,914,321	5,684,625	4,478,289	476,431	104,900	1,103,714	1,428,777
1873	100,027	.....	22,400,799	18,598,749	3,428,563	2,245,083	934,822	130,600	821,429	1,356,809
1874	177,500	213	23,734,299	17,592,610	4,711,374	2,927,833	850,679	237,000	521,714	1,370,291
1875	102,064	1,000	22,522,866	8,415,903	3,186,688	3,802,958	230,607	159,466	698,686	1,087,889
1876	36,240	.....	11,792,299	11,371,071	3,148,062	3,761,208	681,964	128,900	750,514	852,807

APPENDIX No. 41.

DIRECT EXPORTS OF AMERICAN PRODUCE FROM CHICAGO TO EUROPE DURING THE YEAR 1876

[Prepared by CHARLES RANDOLPH, Esq.]

	Pittsburgh, Fort Wayne and Chicago Railway, (Black and Red Star Lines.)	Lake Shore and Michigan Southern Railway, (Merchants' Dispat h.)	Michigan Central Railway, (Blue, Erie and North Shore Lines.)	Michigan Central and Grand Trunk Railway.	Pittsburgh, Cincinnati and Saint Louis Railway, (National Line;) Erie and Philadelphia, (Dispatch.)	Baltimore and Ohio Railroad.	Lake.
Flour.....bbls..	29, 125	26, 900	21, 805	2, 250	600	2, 600	.....
Wheat.....bush..	705, 646	95, 427	40, 000	32, 7?5	201, 075	.....	134, 785
Corn.....do...	1, 338, 109	446, 108	248, 892	76, 132	68, 432	99, 533	39, 000
Oats.....do...	448, 892	.....	.....	36, 913	.....	.....	.....
Rye.....do...	43, 243	.....	.....	.....	.....	.....	.....
Barley.....do...	.....	21, 697	.....	35, 909	.....	.....	.....
Oatmeal.....bbls..	.....	.....	5, 151	.....	.....	6, 070	.....
Seeds.....lbs..	394, 020	608, 683	169, 250	.....	200, 921	360, 961	.....
Hides.....do...	2, 566, 420	1, 039, 507	746, 080	.....	.....	.....	.....
Leather.....do...	133, 780	248, 904	72, 000	.....	.....	3, 875	.....
Beef and pork...pkgs..	30, 003	14, 496	8, 822	3, 866	1, 089	150	.....
Bacon and hams. boxes..	146, 448	177, 957	80, 047	31, 595	14, 575	2, 890	.....
Lard.....pkgs..	79, 021	28, 192	40, 655	28, 367	2, 921	5, 756	.....
Butter and cheese. do...	35, 274	11, 217	17, 580	2, 839	.....	.....	.....
Tallow.....do...	8, 928	5, 149	1, 623	727	985	.....	.....
Alcohol.....bbls..	7, 200	.....	.....	.....	.....	.....	.....
Oil-cake.....lbs..	1, 184, 000	1, 468, 750	1, 812, 750	.....	231, 685	441, 765	.....
Tobacco.....do...	.....	97, 100	575, 400	.....	.....	216, 103	.....
Miscellaneous....tons..	223	7, 113	2, 527	20	.....	18	.....
Total tons.....	137, 870	85, 047	47, ?39	19, 784	13, 263	5, 868	4, 836

APPENDIX No. 42.

Receipts of flour and grain at Boston, by rail direct and coastwise, 1868 *to* 1876.

[Compiled from the annual reports of the railroad commissioners of Massachusetts.]

Year.	Flour, barrels.		Corn, bushels.		Oats, bushels.		Barley, bushels.	
	Coastwise.	By rail from the West.	Coastwise.	By rail from the West.	Coastwise.	By rail from the West.	Coastwise.	By rail from the West.
1868.....	701, 727	733, 955	1, 847, 159	483, 875	656, 037	606, 033	64, 039	197, 951
1869.....	506, 458	818, 827	1, 055, 676	1, 384, 284	338, 756	1, 076, 675	118, 173	122, 713
1870.....	658, 714	995, 950	945, 981	1, 370, 421	423, 853	1, 676, 108	106, 536	254, 370
1871.....	569, 303	1, 052, 042	481, 303	3, 156, 800	179, 807	2, 244, 086	84, 559	232, 811
1872.....	493, 258	988, 491	320, 755	5, 119, 749	82, 767	2, 384, 699	85, 408	288, 488
1873.....	534, 990	1, 282, 429	304, 867	3, 159, 198	35, 732	3, 245, 016	49, 665	373, 656
1874.....	502, 021	1, 303, 851	219, 394	2, 768, 382	36, 967	2, 885, 812	.....	*309, 564
1875.....	395, 994	1, 230, 137	148, 277	4, 914, 007	196, 089	2, 499, 631	.....	*530, 396
1876.....	293, 066	1, 342, 191	66, 059	7, 933, 644	8, 596	2, 718, 574	.....	.....

* Not reported in detail, and no report for 1876.

The above table indicates the fact, that in 1868 a large proportion of the grain received at Boston from the West was transported via the Lake, the Erie Canal, and Hudson River to New York, and was thence shipped coastwise to Boston; at the present time, however, these supplies reach Boston almost exclusively by direct rail transport.

APPENDIX No. 43.

Statement showing the receipts, exports, and local consumption of flour and grain at Boston, New York, Philadelphia, and Baltimore.

Ports.	Flour.			Wheat.			Corn.		
	Receipts.	Exports.	Local consumption.	Receipts.	Exports.	Local consumption.	Receipts.	Exports.	Local consumption.
1873.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Boston	8,976,360	1,156,805	7,819,853	880,747	486,128	394,619	5,558,362	162,727	5,395,535
New York	17,569,435	8,308,030	9,261,405	34,624,931	27,753,714	6,871,217	24,680,831	16,168,152	8,512,679
Philadelphia	4,973,400	715,145	4,258,255	4,372,600	1,938,870	2,433,730	8,238,400	2,202,368	6,036,032
Baltimore	6,563,060	1,797,830	4,765,230	2,810,917	1,158,097	1,652,820	8,830,449	6,093,618	2,736,831
1874.									
Boston	9,452,435	1,438,590	8,013,845	1,362,017	1,062,366	299,651	3,303,641	380,254	2,923,387
New York	20,235,585	10,729,845	9,405,740	41,863,837	34,771,602	7,092,232	29,661,443	18,647,114	11,014,329
Philadelphia	7,008,180	433,315	7,572,875	5,471,700	1,289,532	4,182,168	5,954,700	2,203,588	3,751,112
Baltimore	7,804,985	2,398,790	5,406,190	6,456,834	3,985,219	2,471,615	9,355,567	5,959,767	3,395,800
1875.									
Boston	8,189,860	1,355,000	6,834,860	1,035,109	784,491	250,618	5,346,340	1,551,770	3,794,570
New York	20,017,970	9,791,045	10,226,925	34,237,602	26,234,291	8,003,311	22,373,236	12,979,200	9,393,036
Philadelphia	7,550,950	906,445	6,644,505	5,950,800	3,302,054	2,648,746	7,960,000	4,601,586	3,358,416
Baltimore	6,959,215	2,265,535	4,694,680	4,409,670	2,064,354	2,345,326	9,567,141	6,980,442	2,586,699
1876.									
Boston	9,181,925	1,340,465	7,844,460	501,767	116,405	388,362	9,005,375	4,160,817	5,844,558
New York	19,875,090	9,786,360	10,088,730	26,600,943	24,945,715	1,655,228	26,677,921	16,575,089	10,202,832
Philadelphia	4,886,275	944,225	3,942,050	4,663,760	2,981,849	1,681,911	19,420,825	16,754,718	2,766,107
Baltimore	6,947,690	2,130,470	4,817,220	3,945,274	1,701,801	2,243,473	24,684,230	20,751,543	3,932,687

Statement showing the receipts, exports, and local consumption of flour and grain at Boston, New York, Philadelphia, and Baltimore—Continued.

Ports.	Rye.			Oats.			Barley.		
	Receipts.	Exports.	Local consumption.	Receipts.	Exports.	Local consumption.	Receipts.	Exports.	Local consumption.
1873.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Boston	332, 849	.....	332, 849	3, 663, 304	.....	3, 663, 304	332, 849	.....	332, 849
New York	1, 176, 310	1, 018, 038	158, 272	22, 402, 824	49, 535	22, 353, 289	3, 412, 963	40, 120	3, 372, 843
Philadelphia	322, 600	5, 000	317, 600	5, 985, 565	25, 997	59, 568	1, 056, 892	.....	1, 056, 892
Baltimore	100, 519	.....	100, 519	1, 265, 072	.....	1, 265, 072	.....	.....	.....
1874.									
Boston	418, 615	.....	418, 615	3, 037, 269	.....	3, 037, 269	418, 615	.....	418, 615
New York	936, 668	639, 062	297, 606	20, 335, 217	125, 149	20, 210, 068	3, 680, 595	3, 200	3, 677, 395
Philadelphia	249, 091	104, 616	145, 475	4, 705, 000	30, 671	4, 674, 329	1, 236, 900	.....	1, 236, 900
Baltimore	118, 634	61, 028	57, 606	1, 114, 188	2, 624	1, 111, 564	.....	.....	.....
1875.									
Boston	530, 396	.....	530, 396	2, 833, 544	.....	2, 833, 544	530, 396	.....	530, 396
New York	501, 435	186, 573	314, 862	20, 375, 115	132, 351	20, 242, 764	5, 083, 026	120	5, 082, 906
Philadelphia	260, 480	.....	260, 480	4, 820, 400	33, 810	4, 786, 590	1, 652, 700	.....	1, 652, 700
Baltimore	74, 529	.....	74, 529	977, 514	.....	977, 514	.....	.....	.....
1876.									
Boston	795, 689	.....	798, 689	2, 622, 150	.....	2, 622, 150	798, 689	.....	798, 689
New York	1, 881, 288	1, 412, 673	469, 615	24, 435, 606	692, 614	23, 742, 992	7, 862, 049	116, 815	7, 745, 234
Philadelphia	532, 100	494, 074	38, 026	4, 477, 000	842, 217	3, 635, 783	1, 361, 850	.....	1, 361, 850
Baltimore	42, 160	13, 137	29, 023	810, 202	27, 535	782, 667	.....	.....	.....

APPENDIX No. 44.

Statement showing the length of main line, branches, and leased lines operated and controlled by some of the principal railroad companies of the United States

Roads.	From—	To—	Length of main line.	Length of leased lines and branches.	Total.
Grand Trunk	Portland, Me	Detroit, Mich	876.00	501.50	1,377.50
Boston and Albany	Boston, Mass	Albany, N. Y	201.65	115.83	317.48
New York Central and Hudson River	New York City, N. Y	Buffalo, N. Y	441.75	558.45	1,000.20
Erie	Jersey City, N. J	Dunkirk, N. Y	459.00	500.00	959.50
Pennsylvania	Philadelphia, Pa	Pittsburgh, Pa	358.00	5,575.00	5,933.00
Baltimore and Ohio	Baltimore, Md	Wheeling, W. Va	379.60	1,088.70	1,468.30
Illinois Central	Cairo, Ill	Dunleith, Ill	455.72	402.16	1,107.66
	Centralia, Ill	Chicago, Ill	249.78		
Chicago, Burlington, and Quincy	Chicago, Ill	Plattsmouth, Nebr	505.00	796.25	1,301.25
Chicago, Rock Island, and Pacific	do	Council Bluffs, Iowa	500.75	479.29	980.04
Louisville and Nashville	Louisville, Ky	Nashville, Tenn	185.00	549.70	734.40
Chicago and Northwest	Chicago, Ill	Marquette	431.00	804.78	1,990.78
	do	Council Bluffs	488.00		
	do	Winona Junction	267.00		

N. B. The Boston and Albany has a double track for 201 miles. The New York Central has 515 miles of double track, 231 miles of third track, and 222 miles of fourth track, and 413 miles of side-track. The Erie Railway has 306 miles of double track, and 114 miles of third track, and 337 miles of side-track. The Pennsylvania Railroad has 355 miles of double track and 357 miles of third and fourth tracks and sidings. The Baltimore and Ohio Railroad has 362 miles of double track and 830 miles of third and fourth tracks and sidings.

APPENDIX No. 45.

ELEMENTS EMBRACING THE COST OF TRANSPORTATION ON A RAILROAD, BY ALBERT FINK, ESQ., OF LOUISVILLE, KY.

MAINTENANCE OF ROADWAY AND GENERAL SUPERINTENDENCE.

ROAD REPAIRS PER MILE OF ROAD.

1. Adjustment of track.
2. Ballast.
3. Ditching.
4. Culverts and cattle-guards.
5. Extraordinary repairs, slides, &c.
6. Repairs of hand and dump cars.
7. Repairs of road tools.
8. Road watchmen.
9. General expense of road department.
10. Cross-ties replaced, value.
11. Cross-ties replaced, labor.
12. Cross ties, train expense hauling.
13. Bridge superstructure repairs.
14. Bridge-watchman.
15. Shop-building repairs.
16. Water-station repairs.
17. Section-house repairs.
18. General superintendence and general expense of operating department.
19. Advertising and soliciting passengers and freight.
20. Insurance and taxes.
21. Rent-account.
22. Salaries of general officers.
23. Insurance, taxes, and general expense.

STATION EXPENSES PER TRAIN-MILE.

24. Labor loading and unloading freight.
25. Agents and clerks.
26. General station expense, light, fuel, &c
27. Watchmen and switchmen.
28. Expenses of switching.
29. Stationery and printing.
30. Telegraph expenses.
31. Depot repairs.

MOVEMENT EXPENSES PER TRAIN-MILE.

32. Adjustment of track.
33. Cost of renewal of rails, value.
34. Labor replacing rails.
35. Train expense hauling rails.
36. Joint fastenings.
37. Switches.
38. Locomotive repairs.
39. Oil and waste used on locomotives.
40. Watching and cleaning.
41. Fuel used in engine-house.
42. Supervision and general expense in engine-house.
43. Engineers and fireman's wages.
44. Conductors and brakeman.
45. Passenger-car repairs.
46. Freight-car repairs.
47. Oil and waste used by cars.
48. Labor oiling and inspecting cars.
49. Train expenses.
50. Fuel used by locomotives.
51. Water-supply.
52. Damage to freight and lost baggage
53. Damage to stock.
54. Wrecking account.
55. Damage to persons.
56. Gratuity to employés.
57. Fencing burned.
58. Law expenses.

APPENDIX No. 46.

FORMULA FOR ASCERTAINING THE COST OF RAILROAD TRANSPORTATION PER TON PER MILE.

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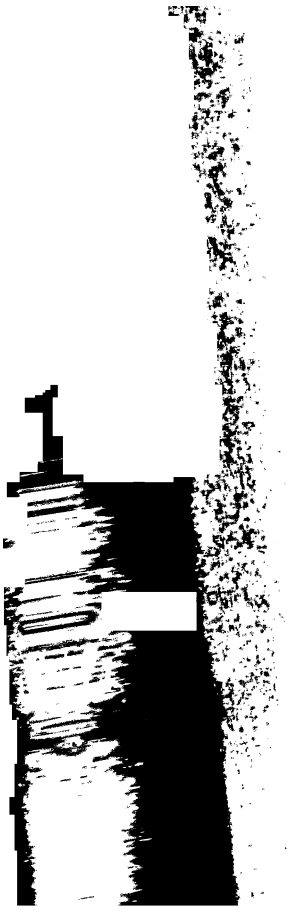
Showing, also, with reference to the items of expenditures before stated, the various elements entering into the calculation of cost.

$$\text{Movement-expenses per ton-mile} = \frac{\text{movement-expenses per train-mile, (items 41 to 58,)}}{\text{average number of tons of freight in each train}} = a.$$

$$\text{Station-expenses per ton-mile} = \frac{\text{cost of handling freight, (items 24 to 38,) at forwarding-station + at delivery-station}}{\text{length of haul}} = b.$$

$$\text{Maintenance of road per ton-mile} = \frac{\text{cost of maintenance of road per mile per year, (items 1 to 23,)} \times \frac{\text{total miles run by freight-trains per year}}{\text{total revenue-trains, passenger and freight, per year}}}{\text{average number of tons of freight transported over one mile of road per year}} = c.$$

$$\text{Interest per ton-mile} = \frac{\text{cost of road per mile} \times \frac{\text{rate of interest per annum}}{100} \times \frac{\text{number of freight-train miles per year}}{\text{number of revenue-train miles, freight and passenger, per year}}}{\text{average number of tons of freight transported over one mile of road per year}} = d.$$

Total cost per ton-mile $= a + b + c + d.$

In order to make use of this formula, it is necessary to know the fifty-eight items of expense enumerated before, all of which vary on different roads and enter into different combinations with each other. Some of the items of movement-expenses, (41 to 58,) change with the weight of trains, and have to be ascertained in each individual case. The average cost for the year can be made the basis of the estimate. Besides the items already shown, the following other items enter into the calculation: The average number of tons of freight in train per mile of the round trip of the train; the average length of the haul; the number of miles run over the road, with freight and passenger trains, per annum; the cost of the road; the rate of interest; and the total number of tons of freight carried during a year over one mile of road. Without these data it is impossible to make a correct estimate of the cost of transportation on railroads.